

O. DREYER

Cultural Changes in Developing Countries

INTRODUCTION	1
Chapter 1. THE CONCEPT OF CULTURE	1
Chapter 2. THE CONCEPT OF CULTURE	1
Chapter 3. THE CONCEPT OF CULTURE	1
Chapter 4. THE CONCEPT OF CULTURE	1
Chapter 5. THE CONCEPT OF CULTURE	1
Chapter 6. THE CONCEPT OF CULTURE	1
Chapter 7. THE CONCEPT OF CULTURE	1
Chapter 8. THE CONCEPT OF CULTURE	1
CONCLUSION	1



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The book contains data on the cultural changes in the developing countries in the 1960s and early 1970s. The chapter on Bangladesh has been written prior to the events of 1975 in that country.

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КУЛЬТУРНЫЕ ПРЕОБРАЗОВАНИЯ
В РАЗВИВАЮЩИХСЯ СТРАНАХ

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CONTENTS

	<i>Page</i>
INTRODUCTION	7
<i>Chapter 1. THE SIGNIFICANCE OF THE USSR'S EXPERIENCE OF CULTURAL DEVELOPMENT FOR THIRD WORLD COUNTRIES</i>	11
<i>Chapter 2. CULTURAL CHANGES IN THIRD WORLD COUNTRIES</i>	31
<i>Chapter 3. THE ARAB REPUBLIC OF EGYPT</i>	93
<i>Chapter 4. IRAN</i>	134
<i>Chapter 5. INDIA</i>	178
<i>Chapter 6. NEPAL, BHUTAN, SIKKIM</i>	249
<i>Chapter 7. PAKISTAN</i>	254
<i>Chapter 8. BANGLADESH</i>	285
CONCLUSION	290

Introduction

The achievement of political independence by former colonies in Asia and Africa and the established trend toward liberation from imperialist exploitation in Latin American countries has brought these countries' economic independence to the forefront. They face a difficult task, that of restructuring their colonial economies, overcoming many complications and obstacles, and, above all, considerably raising the productivity of labour and cultural standards, all of which must be achieved in an historically very short time. This can only be done through radical social and economic changes and an intensive growth of the productive forces. An essential condition for the latter is not only progress in the sphere of material production but also rapid development of the most vital element of the productive forces, man himself, which, naturally, makes social and cultural transformation, the organisation of systems of education, public health and science, and their adaptation to the needs of economic growth, problems of prime importance.

At the same time the vast discrepancy between the financial, technical and organisational opportunities of Third World countries and their needs in these fields makes the problem of cultural transformation only soluble by way of far-reaching social and economic progress.

The cultural reforms in these countries have not yet had due attention paid to them in either Soviet or foreign liter-

ature, though it is hardly possible to make a scientifically grounded evaluation of their development prospects without study and critical analysis of the results of these reforms. Research into these questions is all the more important since the struggle between the various class forces for influence over the minds of the rising generation in Asia, Africa, and Latin America has greatly sharpened in our day (on the international plane, too, as well as the national). The age composition of the population in most of these countries (its "youthfulness") makes finding of the most effective ways for advance in the educational system an extremely urgent task from both the political and the economic point of view. Growth of the productive forces, moreover, for which progress in public education is a necessary precondition (and a result), must be achieved at rates very much higher than those that prevailed in Western Europe in the eighteenth and nineteenth centuries. The scientific and technological revolution is making new and increased demands on the productive forces.

"The period of the awakening of the East in the contemporary revolution," Lenin brilliantly surmised, "is being succeeded by a period in which all the Eastern peoples will participate in deciding the destiny of the whole world, so as not to be simply objects of the enrichment of others. The peoples of the East are becoming alive to the need for practical action, the need for every nation to take part in shaping the destiny of all mankind."¹ Cultural reorganisation is vital in this process, which is now going on before our very eyes. And it is quite evident that the more backward a country is socially and economically, the more marked are the survivals of the past in its social life and in its national psychology and customs, and the more difficult is it to introduce reforms of any kind, particularly cultural ones.

In this book we try to examine both the general and the particular in the way cultures are being transformed in developing countries, to trace the changes that have occurred in the fields of education, public health, and science, and in

the mass media, to show the results achieved and their impact on the resurgence of these countries, and to evaluate the prospects of their further cultural development, as well as to deal with the set of problems to do with social and economic advance. Having isolated certain problems common to Third World countries we then examine these problems as they affect each country separately, namely, Iran, the Arab Republic of Egypt, and the South Asian countries of India, Nepal, Pakistan, Bangladesh, etc.

What governed this choice? India, with her vast human resources and specific social and economic structure, complicated by a multi-structural economy and traditional social institutions, is a country that reveals an amazing intertwining of the ultramodern and the ancient, and one that has great influence among the states of Asia.

The countries of South Asia, closely linked with India by a common destiny, are doing their best to build modern society in their own, as it were, way; and the processes going on there are naturally of great interest to the student of the subcontinent as a whole.

Iran is one of the few Third World countries that have experienced a marked change in their economic and social indices over the past ten years or so. Her success is due to very diverse factors, not least the effective use made of natural resources, the obvious adaptation of ruling circles to the country's new internal situation, a realistic foreign policy that recognises the importance of good-neighbourly relations with adjacent states, and lastly, her relative demographic stability. Her achievements have attracted the attention of the governments of a number of Asian countries, who are now trying to adopt some of the methods being used in Iran.

Although it is not sufficient, in order to draw final conclusions, to compare the statistics of countries with dissimilar demographic indices, a relatively unequal endowment of natural wealth, and unlike socio-economic and socio-cultural features by the late 1940s still the results achieved in the

decade 1960-1970 provide a basis for defining the trend of the transformations and the extent to which they correspond to the national tasks.²

Our main sources for this study have been the statistics published by official bodies in India, Pakistan, Iran and Egypt; the publications of international organisations (UNESCO, WHO, etc.); collections of governmental and other documents; and various reference books, national economic development plans, and so forth. We have also striven to use data on the various agreements between the USSR and developing countries concerning education, health and science, and also our own personal observations made during visits to India and Egypt between 1963 and 1970.

The book consists of two parts. The first shows the importance for Third World countries of Lenin's theory of cultural revolution and the USSR's experience of cultural construction, and examines some general problems of social and cultural transformations in these countries. The second part is devoted to analysing concrete aspects of the cultural and social development of Egypt, Iran, India and the countries of South Asia.

¹ V. I. Lenin, *Collected Works*, Vol. 30, p. 160.

² Interesting work grouping non-socialist countries according to the level of development of their productive forces and type of economic structure has been done under V. L. Tyagunenko, L. A. Friedman, and L. A. Gordon at the USSR Academy of Sciences' Institute of World Economy and International Relations and the Institute of International Labour Movement (see *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, Nos. 11 and 12, 1970).

THE SIGNIFICANCE OF THE USSR'S EXPERIENCE OF CULTURAL DEVELOPMENT FOR THIRD WORLD COUNTRIES

The birth and development of young sovereign states from the ruins of former colonial empires is a complicated, many-sided and contradictory process that has been the subject of intensive research from the standpoint of Marxism-Leninism. Hundreds of articles and books have been devoted to their social and economic, political and ideological problems, but one must note the considerable gap revealed by careful study of this literature. As we have already remarked, it throws little light on cultural backwardness and ways of eradicating it, problems that are posed today with special sharpness before the progressive forces of the independent countries of Asia, Africa and Latin America.¹ The general works usually just touch on questions of the cultural potential of nations that previously languished under the yoke of colonialism, and of their capacity for new cultural and historical creativity. This aspect, furthermore, is often treated on the plane of the critical tasks of Marxism-Leninism in combating openly neo-colonialist conceptions of the cultural incapacity of the peoples of former colonial and dependent countries.²

The specialised works (for the most part articles and still few in number) examine only separate and isolated aspects of cultural policy in developing countries (education, public health, training of cadres, etc.), and as a rule are of a summary, descriptive, reference character. On the whole, it is

true, they provide food for thought on the general problems of cultural development, but the gap between the empirical data and their theoretical interpretation is still very wide, a situation already recognised in Soviet historical literature. Some writers on the general theory and practice of cultural revolution have indicated ways of closing this gap.

The problem has been concretely formulated by Prof. A. I. Arnoldov, a Soviet scholar, who writes: "Analysis of the historical events of recent times justifies our posing the question of different types of cultural revolution in modern conditions and so giving a theoretical interpretation of the phenomena of cultural life that have developed in the various countries now embarked on the road of liberation and national independence. . . . The justification for posing this problem is the sweeping changes taking place in literally all countries that have been liberated from colonial oppression. In countries where the people have achieved national independence, thrown off the fetters of colonialism and won democratic freedoms, a cultural revolution inevitably takes place, albeit on a varying scale and with very special features. The cultural revolutions taking place in various countries differ in content; that in Ghana, for instance, differs from that in Czechoslovakia. In the former a national democratic cultural revolution is taking place, in the latter—a socialist cultural revolution."³

The idea of qualifying changes in the cultural sphere as a special type of cultural transformations seems very fruitful, as it opens the way to an integral approach to these phenomena and to the study of their general, specifically national features. At the same time, the use of the term "national democratic cultural revolution" in reference to cultural development in "literally all countries liberated from colonial oppression" is hardly justified. It is formulated by analogy with the concept "national-democratic revolution", defined in the documents of the 1960 Moscow Meeting of Representatives of the Communist and Workers' Parties, and while very important in bringing out the essence of the political

processes in developing countries, it raises doubts when applied to the cultural sphere.

The term "cultural revolution", first introduced into Marxist literature by Lenin, arose from his theoretical analysis of the line of development of a quite different socio-economic, political, cultural and ideological structure,⁴ and was used to describe the vast and truly revolutionary cultural changes possible only in conditions of socialist revolution and in a state of the dictatorship of the proletariat. Prof. Arnoldov himself stresses the "difference in principle of the ideological foundation, and the different political and economic basis" of the socialist cultural revolution.⁵

The point here, however, is not the wording, as one might think, but that the term "cultural revolution" is an adequate expression for the vast cultural advances that occur during the real revolutionary transformations of capitalist society into a socialist one. When we set the aims and practice of socialist cultural revolution against the measures that Arnoldov classes, in their entirety, as "democratic cultural revolution",⁶ it becomes obvious that in the first case we are referring to fundamental changes in the cultural and ideological structure of society, and in the second to a democratic reform which both qualitatively and in scope and depth is not on a par with socialist cultural transformations.

Use of one and the same term to characterise processes which, though similar, stem from a different socio-economic and political basis seems incorrect. Terminological clarity and accuracy are especially important when studying such a subtle area of human activity as spiritual culture. While rejecting the term "national democratic cultural revolution", or simply "democratic cultural revolution", suggested by Arnoldov, we still recognise as promising his idea that cultural transformation in developing countries is a special type of reform.

Here we face a theoretical task of a higher order, that of formulating the premises and criteria for deep study of the processes of cultural construction in Third World coun-

tries. Lenin's study of cultural revolution is invaluable in this. "In the conditions of spreading cultural revolution in socialist countries," the Soviet researcher G. G. Karpov says, "the rebirth of national cultures and the development of their progressive traditions in the independent countries of Asia, Africa and Latin America, and the growing opposition between socialist culture and the decaying culture of capitalism on the world scene, Lenin's study of cultural revolution is of international significance."⁷

Acceptance of this thesis and the possibility of studying the relevant processes in developing countries on the basis of Lenin's theory, do not contradict the need to limit use of the term "cultural revolution". Here we come up against a difficulty of another kind, arising from the very approach to Lenin's programme of cultural construction. It is one thing to regard it as the sum of pronouncements on various branches of culture, ignoring the concrete historical environment, and to employ them to analyse phenomena produced by a different social and political atmosphere; that, though the easiest way, would be fruitless. It is something else to take Lenin's teaching as an integral and harmonious system of ideas and propositions embracing a broad range of purely methodological problems and united by a common core, the dialectics of the interaction of the political, socio-economic, and cultural aspects of the revolutionary process.

Sadly, this approach is still extremely rare, though some interesting theoretical ideas have been expressed in print.⁸

Generalisation of the accumulated practical experience of cultural revolution in the multinational Soviet state should help Soviet orientalists and Africanists to interpret the nature of the cultural transformations in developing countries: "A half-century's experience of socialism has confirmed the rightness of the Party's Leninist policy in the sphere of cultural construction."⁹ M. P. Kim, an eminent scholar in this field, has justly remarked that the research into problems of cultural reorganisation in Soviet historiography amounts to a number of essays on separate branches of cul-

ture—public education, political enlightenment, the shaping of the intelligentsia, etc.¹⁰ Creative study of Lenin's heritage and of the policy of the CPSU in the cultural sphere—a task that is far from completed—would immensely benefit the progressive forces of emerging states, the more so that Lenin's teaching and the carrying through of cultural construction, especially the international aspect of the problem, are constantly misrepresented and distorted in bourgeois sociology,¹¹ Right-wing revisionist literature, and in the theory and practice of "Leftist" petty-bourgeois revolutionism.¹²

In the Declaration of the 1957 Meeting of Representatives of the Communist and Workers' Parties it was noted that the most important law in the development of countries that had embarked on the road to socialism was the "carrying out of a socialist revolution in the spheres of ideology and culture and the creation of a numerous intelligentsia devoted to the working class, the working people, and the cause of socialism".

The need for Third World countries to carry out social and cultural transformations as soon as possible is now accepted everywhere: but the decade 1960-1970 showed that the growth rates achieved have still not narrowed the gap between industrially advanced and developing countries in levels either of production or of consumption, and there are no grounds for supposing that the situation will alter in the near future. In a speech to the UN Conference on Trade and Development U Thant called that decade a period of disappointed hopes. Nevertheless, it was marked by significant advances in education and public health in emerging countries and, particularly important, in the social consciousness of their peoples.

The changes that are taking place are of great diversity, expressed in the varying content of the general democratic reforms and in the different means of implementing them. The paths of national resurgence have been defined and chosen in very bitter struggle against external and internal forces of reaction; and in some states this has been very

closely linked with activation of workers' resistance to the exploiting classes. That in turn raises the problem of socialist orientation. Radical social and economic transformations make it urgent to introduce social and cultural reforms directed at creating an advanced society. In countries that choose a socialist orientation, construction of the new society must without fail go hand in hand with giving the broad masses the opportunity of rising to the heights of world culture and on that basis of making maximum use of scientific and technological progress.

In a recent work by Prof. R. Ulyanovsky, in which he gives probably the most thorough, and in our view, most convincing formulation of the objective criteria of the non-capitalist road, he stresses that a vital aspect of any social transformation within the framework of non-capitalist development are efforts aimed at gradually raising the well-being and culture of the masses, i.e., at eliminating unemployment, disease, illiteracy, and so on.

The USSR's experience of socialist construction naturally has more than a theoretical interest for emerging countries, as the problems they are facing are more or less analogous to those resolved by the Soviet Republic after the October Revolution. The advances achieved by the peoples of the Soviet Union in the cultural sphere, and their extraordinary results in developing education, public health, science, and the arts in such a short historical period, have always attracted the attention of public opinion in Asia, Africa, and Latin America. Even in colonial days many leaders of the national liberation movement pointed to this as an example their countries would have to imitate after liberation.

The changes that have taken place in the former non-Russian outskirts of the Russian Empire have a particularly strong attraction for Third World countries. Central Asia, in particular, has literally become a place of pilgrimage for hundreds and thousands of delegations from Eastern countries, who are amazed by the gigantic leap from backward-

ness to progress that the "Moslem" peoples there have made in so short a time.

The colossal achievements of cultural construction in the Soviet Union become very clear when we turn to the facts and figures of the past. Lenin once wrote that Russia, on the eve of the Great October Revolution, stood last in the list of European countries as regards literacy; 73 per cent of the population, not counting children under school age (i.e., under nine), could neither read nor write. "There is no other country so barbarous," he said, "and in which the masses of the people are *robbed* to such an extent of education, light and knowledge—no other such country has remained in Europe; Russia is the exception."¹³

The prospects seemed far from heartening too. As the Liberal-Populist newspaper *Nedelya* wrote (in 1893), Russia could not hope, even with maximum exertion of all forces and the building of 3,250 new schools a year, to introduce universal education in less than 250 years.¹⁴

"The literacy of our population is not only extremely low," G. Falbork and V. Chernolussky commented in 1897, "but its progressive development is so slow that if matters remain as they are now we shall only achieve universal literacy toward the end of the next century."¹⁵

Many people shared that opinion. In 1900, an educationist V. Ivanovich prophesied in the journal *Vestnik vospitaniya*, that one could only expect universal literacy in Russia in the twenty-first century.¹⁶

Forecasts for Central Asia and Kazakhstan were extremely gloomy. According to the 1897 census 99.5 per cent of Tajiks,¹⁷ 99.4 per cent of Kirghizes, 99.3 per cent of Turkmenians, 98.4 per cent of Uzbeks and 97.9 per cent of Kazakhs were illiterate. Dozens of nationalities had no written language at all. "On the basis of scrupulous statistical calculations," *Vestnik vospitaniya* concluded, the eradication of illiteracy among these peoples "would take 4,600 years".¹⁸

Following the victory of the Great October Revolution, public education became the starting point not only of the

cultural revolution but also of the task of establishing and consolidating Soviet society.

Lenin saw the campaign for mass literacy as a matter of prime importance for the young republic, one determining its destiny, its industrial development, and, finally, its very existence within capitalist encirclement. "A communist society cannot be built in an illiterate country," he said.¹⁹

In the Central Asian republics solution of the problem of education encountered additional difficulties due to the extreme backwardness of the population, particularly of the women, and to the strong influence of elements hostile to the Soviets, the *bais* and reactionary elements of the clergy. It should also be remembered that, apart from features common to the whole Central Asian region, each area had its own particular conditions, which had to be taken into account.

"The great miracle of transforming the ancient lands unfolded consciously and according to plan",²⁰ but the question of method had still to be answered, for there was no historical experience of such a transformation. In joining the friendly family of peoples within the multinational Soviet state, and taking the path of socialist development, the peoples of Central Asia received preferential opportunities ensuring rapidly increasing rates of cultural growth. The Communist Party and the Soviet Government assigned funds to the Soviet East, considerably greater than those granted to more developed areas, and gave aid in the form of experts, equipment and literature. Already in the first post-revolutionary years the foundations of a state policy of mutual aid were laid, a policy that is still giving results today. It is difficult to exaggerate the importance of studying the means and patterns by which the Soviet republics in the east developed; they became a unique "laboratory of scientific socialism".²¹

The problems of education in Central Asia were resolved in several stages. The acute need for cadres to build the new society made the task of eliminating adult illiteracy excep-

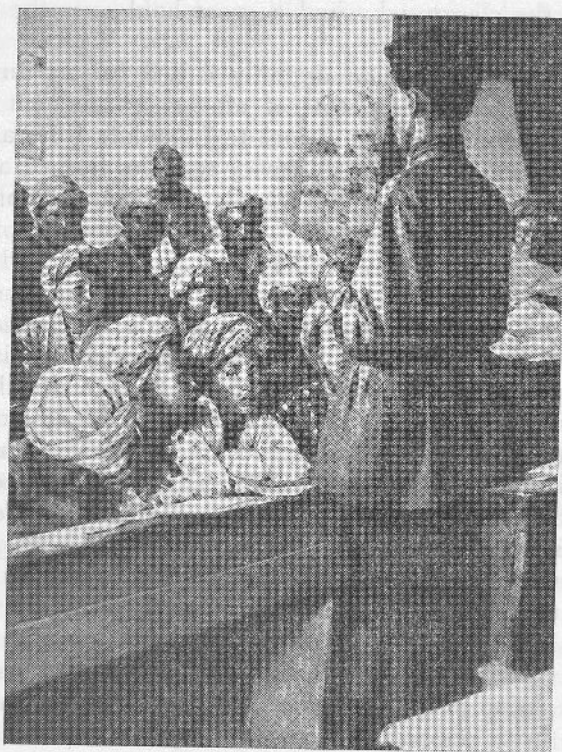
tionally pressing. Until it was resolved there could be no counting on expansion in agriculture or the creation of industry. The almost complete absence of literacy among Communists, Young Communists and other social activists hampered work among the masses, especially in the complex situation of combating kulaks and *bais* and the reactionary part of the clergy, who had a great hold over the population.

The political situation urgently called for an immediate change in the existing state of affairs. Throughout the republics Emergency Commissions to Liquidate Illiteracy were organised, voluntary anti-illiteracy societies formed and Likbez (special anti-illiteracy) schools opened. Complications soon arose, caused both by the disastrous shortage of teachers capable of teaching in the local languages, and by the antagonism of certain sections of the population. The teachers of the religious schools, the *maktabas* and *madrasahs*, were anti-Soviet inclined. In several areas, in Tajikistan for example, participation in the campaign to eradicate illiteracy involved direct danger. The *basmachi*, taking advantage of the mountainous nature of the country and the remoteness of the *kishlaks* (villages), raided them, destroying the building of Soviet institutions and schools, and killing Communists, activists and teachers.

Nevertheless, not only did the fight to overcome age-old backwardness not stop, but it developed on an ever-widening scale. Appropriations for education increased significantly.²² Textbooks were published in the languages of the Central Asian peoples, courses to train Likbez teachers were started (with special curricula and syllabuses), schools for the semi-literate were founded, and cultural campaigns were organised uniting the efforts of a great army of volunteer social workers. Trade union organisations donated funds for cultural campaigns, and the local people provided premises for the Likbez schools. In Kazakhstan and Kirghizia, where a good part of the population lived a nomadic or semi-nomadic way of life, schools were set up in *yurts*, and trav-

elled with the drovers and shepherds as they followed their herds.

All this yielded brilliant results. By the end of the 1930s, the percentage of literate adults was 82.8 in Tajikistan, 80 in Turkmenia, and 77 in Kazakhstan.



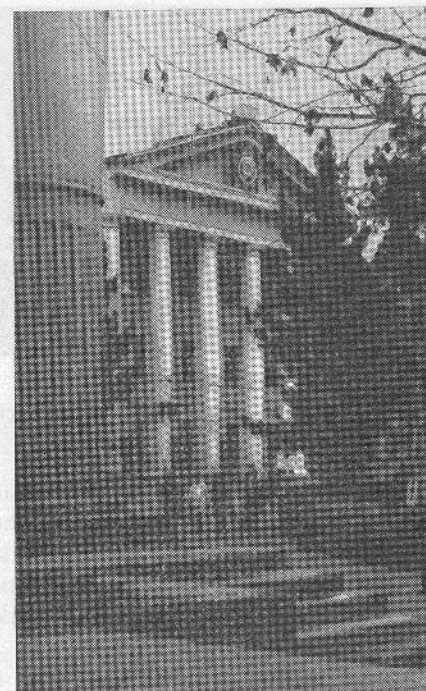
Lesson at a new kishlak school (1927)

The movement to educate women, a vital precondition for their liberation, attained broad scope. "The first demand of women who have thrown off the yashmak," wrote the newspaper *Pravda Vostoka* in May 1927, "is a school." The

movement developed with extraordinary strength. In 1927 there were 114 women's anti-illiteracy centres functioning in four regions of Uzbekistan, involving 14,603 Uzbek women.

In the resolution of the Central Committee of the Communist Party (Bolsheviks) "On the Work of Liquidating Illiteracy" dated May 17, 1929, particular attention was paid to work "among women of the local population". This matter called both for a careful approach and for flexibility. Only women could be used to teach women, but the standard of literacy among women was very low.²³ The training of women teachers for the anti-illiteracy schools was therefore immediately undertaken, and special teacher training courses and secondary teacher training schools were opened for women. In Tashkent and Samarkand 120 women teachers from the local nationalities were graduated.

The Moslem woman who bared her face and took her place in the classroom was a terrible challenge to age-old traditions. Reactionary elements among the clergy were not prepared to accept the situation; they founded religious schools for women, and occasionally even went to extremes.



The Abu-Ali-Ibn-Sina State Medical Institute in Dushanbe



Students at a lecture

In the autumn of 1929, a Turkmenian woman teacher, Gyul Bakhar, who had incited her friends to emancipate themselves, was brutally murdered. Many other cases of atrocities are known. But in spite of reactionary opposition, the percentage of literate women in Uzbekistan was 73.3 by 1939 and in Turkmenia 80.

An important problem that had to be solved during the struggle for universal literacy was that of simplifying the written language (for some nationalities an alphabet had to be created from scratch). The task was made easier at first by employing a Latinised alphabet for the language and later the Cyrillic alphabet.

The liquidation of illiteracy was only the first stage in the complex business of educating the peoples of Central Asia, but it determined the success of the cultural revolution.²⁴ In the next stage it proved possible to establish a new system of education corresponding to the needs of socialist construction; to introduce universal, compulsory, free elementary education, and then secondary; to found national higher schools; to train an army of specialists for the national economy (engineers, technicians, agronomists, doctors, teachers, etc.) and also national scientific cadres, and to found local

academies of science, museums, libraries, theatres, and so on. The republican capitals, Tashkent, Ashkhabad, Alma Ata, Dushanbe and Frunze, have become some of the country's biggest cultural centres. The data in Table 1 give one some idea of the immensity of the changes effected.

Table 1

Number of Students, Research Workers
and Doctors in Central Asia
and Kazakhstan in 1970

Republic	Population (000,000s)	Students (000s)			Research workers (000s)	Including candi- dates of science (000s)	Doctors (000s)
		General education schools	Secondary technical & other specialised schools	Higher educational establishments			
Uzbek SSR	12.3	3,273	163	233	26	7.5	24.4
Turkmen SSR	2.2	559.9	28.7	29.1	more than 3	1.2	4.8
Kazakh SSR	13.2	3,241	85.4	199	more than 27	25.3	28.8
Kirghiz SSR	more than 3	772.4	41.7	48.4	5.84	5.5	6.2
Tajik SSR	2.99	774.5	35.3	44.5	more than 5	approx. 1.5	4.6

Sources: Returns of the republican Central Statistical Boards (see *Pravda Vostochna*, November 5, 1971; *Turkmen'skaya iskra*, November 6, 1971; *Kazakhstanskaya pravda*, November 6, 1971; *Sovetskaya Kirghiziya*, November 7, 1971; *Kommunist Tadzhikistana*, November 7, 1971), and of the Central Statistical Board of the USSR.

In this connection data published recently by the well-known Polish economist, J. Kleer, is of great interest.²⁵ Kleer compares the results of economic development in various Asian countries (Afghanistan, Iran, and Turkey) and in the Soviet Central Asian republics and Kazakhstan. The figures

showing the changing proportion of the urban population (in per cent), for example, are interesting:²⁶

	1927	1965
Kazakh SSR	8.5	48
Tajik SSR	10.3	35
Turkmen SSR	13.7	49
Iran	—	37
Turkey	24.2	28

Particularly striking are the figures on the number of students in higher educational institutions per ten thousand of the population (1965/66):²⁷

Kazakh SSR	119
Kirghiz SSR	121
Tajik SSR	188
Turkmen SSR	103
Uzbek SSR	156
Afghanistan ²⁸	1.41
Iran ²⁹	11
Turkey ³⁰	28

These figures convincingly bring out the advances made by these Soviet republics, which were at a lower level than Iran and Turkey before the October Revolution.

The cultural revolution in the USSR was the first experience of its kind in the world. Lenin's words have come true: "A socialist Soviet Republic in Russia will stand as a living example to the peoples of all countries, and the propaganda and revolutionising effect of this example will be immense."³¹ The greatness of Lenin's plan of cultural transformation and its successful implementation are recognised in the documents of international organisations, in particular of UNESCO. In the basic documents of the conference on educational planning it was stated that the USSR, two-thirds of whose population was illiterate in 1913, was now among the countries whose education was most developed

and whose training schemes most closely corresponded to its needs for cadres.

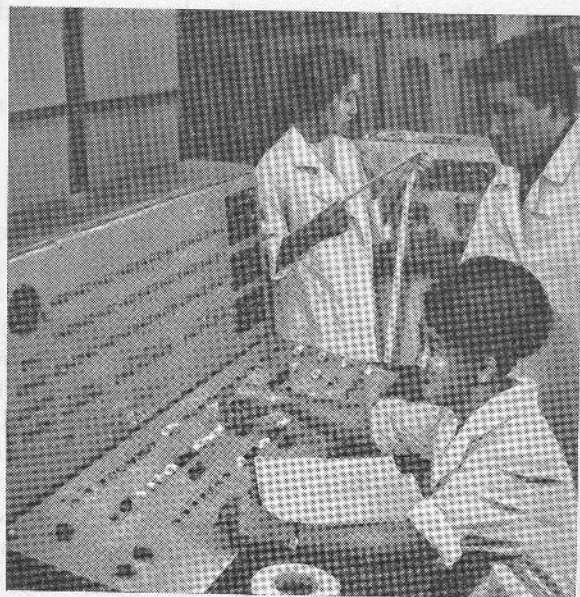
At the joint jubilee meeting of the CPSU Central Committee, the USSR Supreme Soviet and the RSFSR Supreme Soviet on December 21, 1972, L. I. Brezhnev said:

"Tremendous assistance was given to the fraternal Union republics in cultural development, in education, and in the training of personnel. Large contingents of young men and women from the national republics, regions and areas were enrolled at institutions of higher learning in the country's major centres. Dozens of universities and institutes were opened in the republics. By the will of the Party the socialist cultural revolution rapidly spread to the remotest areas. . . .

"The cultural development of Kazakhstan and the Central Asian republics is equally striking. They have achieved virtually 100 per cent literacy. Almost half the population in each republic are men and women with a higher or secondary (complete or incomplete) education. In Uzbekistan alone there are now more specialists with a higher or secondary special education than the Soviet Union had working in its economy in the late 1920s. Modern science has been firmly established in these republics, and in their national academies there are thousands of scientists engaged in valuable research.

"In the capitalist world much more modest achievements are frequently labelled as 'miracles'. But we Communists do not regard what has happened in Soviet Central Asia and Soviet Kazakhstan as being in any way supernatural. You might say that it is a natural miracle, because it is natural under Soviet power, under socialism in the context of the friendship and brotherhood of nations that have been established in this country."

There is no doubt that the experience of the Soviet republics, including those of Central Asia, can be employed by developing countries (especially to solve such practical problems as the creation of a written language, the eradication of illiteracy, and improvement of the school system); but



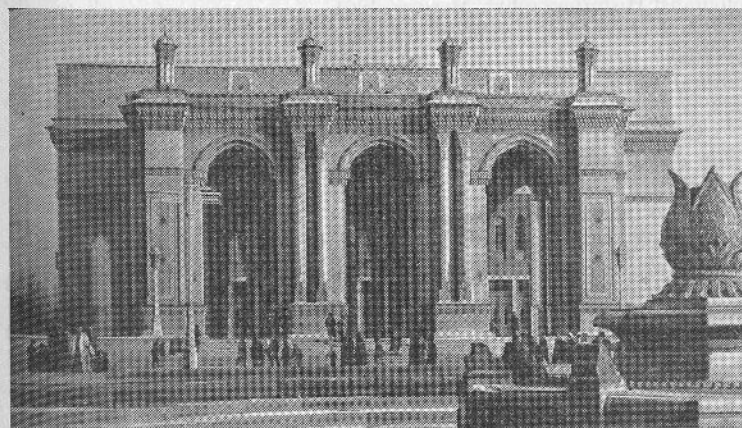
Computer Centre at the Kirghiz State University

mechanical transference of this experience to the multiform conditions of Third World countries will not of itself lead to victory of the cultural revolution in them. Any attempt to overcome cultural backwardness without making profound social and economic changes is doomed to failure. The radical reconstruction of the educational and health systems in the USSR was only realised through the creation of the appropriate economic basis, co-ordination of the plans for cultural transformation with those for economic development, and the social renovation of society.

The advances of the Soviet state convincingly demonstrated the advantages and possibilities of socialism. The bare statistics (numbers of doctors, teachers, engineers, and scientists; numbers, per ten thousand of population, of books published, and of attendances of museums, cinemas and theatres) illustrate the achievements of the Soviet republics in the



A local hospital in Mejnen District, Turkmen SSR



The Navoi Opera and Ballet Theatre in Tashkent

cultural sphere. This progress, itself the consequence of enormous social and economic advances, is in turn encouraging further development toward communism.

At the 24th Congress of the CPSU L. I. Brezhnev once again stressed the importance of this sphere of human activity: "Communism is inconceivable without a high level of culture, education, sense of civic duty and inner maturity of people, just as it is inconceivable without the appropriate material and technical basis."³²

The USSR's experience of cultural transformation was and remains an inspiring example for the many countries that have set out, in the second half of the twentieth century, on the road of independent state development.

¹ The documents of the 1969, International Meeting of Communist and Workers' Parties made a strict differentiation in their analytical approach to the social, economic, and political processes taking place, on the one hand, in the newly independent states of Asia and Africa and, on the other hand, in Latin American countries.

² See, for example, R. A. Ulyanovsky, *Neokolonializm SShA i slaborazvitiye strany Azii* (US Neo-colonialism and the Underdeveloped Countries of Asia), Moscow, 1963; Y. B. Chernyak, *Advokaty kolonializma. Neokolonialistskaya istoriografiya* (Advocates of Colonialism. Neo-colonialist Historiography), Moscow, 1964.

³ A. I. Arnoldov, *Sotsializm i kultura. Kulturnaya revoliutsiya v yevropeiskikh stranakh narodnoi demokratii*. (Socialism and Culture. The Cultural Revolution in the European People's Democracies), Moscow, 1962, p. 50.

⁴ On Lenin's use of the term "cultural revolution" see: G. G. Karpov, *Lenin o kulturnoi revoliutsii* (Lenin on the Cultural Revolution), Leningrad, 1970, p. 13.

⁵ See A. I. Arnoldov, *op. cit.*, p. 50.

⁶ Among these measures Prof. Arnoldov includes a broad campaign to eradicate illiteracy, reconstruction and expansion of the entire educational system, the creation of a new, democratic school, the forming of a progressive national intelligentsia, etc. (See A. I. Arnoldov, *op. cit.*, p. 50.)

⁷ G. G. Karpov, *op. cit.*, pp. 6-7; see also the survey in *Ocherki po istoriografii sovetskogo obshchestva* (Essays on the Historiography of Soviet Society), Moscow, 1965, pp. 549-598.

⁸ See, for example, L. Y. Kubbel, "The Tasks and Specifics of Cultural Construction in the Independent Countries of Africa", in *Problemy*

kulturnogo stroitelstva v nezavisimyykh stranakh Afriki (The Tasks of Cultural Construction in the Independent Countries of Africa), Moscow, 1971.

⁹ Resolution of the CC of the CPSU on preparations for the centenary of Lenin's birth, Moscow, 1968, p. 11 (in Russian).

¹⁰ See M. P. Kim, "On the Essence of the Cultural Revolution and the Stages of Its Implementation in the USSR", in *Kulturnaya revoliutsiya v SSSR 1917-1965 gg.* (The Cultural Revolution in the USSR, 1917-1965), Moscow, 1967, p. 31.

¹¹ In this connection we must mention Prof. A. I. Arnoldov's article "The Building of Communism and the Development of Culture" (*Pravda*, August 6, 1971). In reply to bourgeois critics who deny the possibility of the flourishing of culture in a socialist country, he wrote: "The path followed by socialist society has shown our innumerable advantages and possibilities in scientific and technological rivalry between the two social systems. In the sphere of culture as a whole this competition has undoubtedly been won by the socialist world."

"In numbers of engineers and doctors per ten thousand of population, in cinema attendances and in other criteria of cultural growth the Soviet Union firmly occupies first place in the world."

¹² We do not refer to the problems of the "proletarian cultural revolution" in China. What has taken place in that country under that heading has nothing in common with the proletariat, with culture, or with revolution. Soviet criticism of the fabrications of the hungweipings and their inspirers can be found in *K sobytiyam v Kitaye* (On the Events in China), Moscow, 1966; A. Y. Bovin and L. P. Delyusin, *Politichesky Krizis v Kitaye* (The Political Crisis in China), Moscow, 1968, and other works.

¹³ V. I. Lenin, *Collected Works*, Vol. 19, p. 139.

¹⁴ See V. A. Kumanev, *Sotsializm i vsenarodnaya gramotnost. Likvidatsia massovoi negramotnosti v SSSR* (Socialism and Universal Literacy. The Eradication of Mass Illiteracy in the USSR), Moscow, 1967, p. 12.

¹⁵ G. Falbork and V. Chernolussky, *Narodnoye obrazovaniye v Rossii* (Public Education in Russia), St. Petersburg, 1897, p. 156.

¹⁶ *Vestnik vospitaniya*, No. 1, 1900, p. 44.

¹⁷ "Literate and educated people were as rare in pre-revolutionary Tajikistan as fruit-trees in a salty desert," wrote the Tajik writer Sadreddin Aini.

¹⁸ Quoted from R. B. Suleimenov, "On the Historical Experience of the Cultural Revolution in Kazakhstan", *Vestnik AN Kaz. SSR*, No. 2, 1967, p. 4.

¹⁹ V. I. Lenin, *Collected Works*, Vol. 31, p. 296.

²⁰ S. Rashidov, "Beacon of Socialism in the East", *Zvezda Vostoka*, No. 10, 1967, p. 7.

²¹ B. G. Gafurov, "Fifty Years of Soviet Oriental Studies", *Voprosy istorii*, No. 1, 1968, p. 58.

²² In 1934, for example, expenditure on education in Uzbekistan reached 200 million rubles, increasing 6.6-fold, though the total budget only doubled.

²³ In 1926 7.7 per cent of the women of local nationalities in Uzbekistan were literate.

²⁴ We have not attempted the task (which in any case would be beyond the powers of a single scholar) of giving an exhaustive picture of the cultural transformations in the Soviet republics of Central Asia and Kazakhstan. There is extensive literature in Russian on the subject. See: A. K. Valiyev, *Formirovaniye i razvitiye sovetskoi natsionalnoi intelligentsii v Srednei Azii* (The Formation and Development of the Soviet National Intelligentsia in Central Asia), Tashkent, 1966; *Razvitiye sotsialisticheskoi kultury v soyuznykh respublikakh* (The Development of Socialist Culture in the Union Republics), Moscow, 1962; *Minuya kapitalizm* (Bypassing Capitalism) (on the transition to socialism of the Central Asian republics and Kazakhstan), Moscow, 1961; *Ot srednevekovya k vershinam sovremennogo progressa. Ob istoricheskoy opytech razvitiya narodov Srednei Azii i Kazakhstana ot dokapitalisticheskikh otnosheniy k sotsializmu* (From the Middle Ages to the Summit of Modern Progress. On the Historical Experience of the Development of the Peoples of Central Asia and Kazakhstan from Pre-Capitalist Relations to Socialism), Moscow, 1965; B. A. Amantayev, *Sotsializm i korennoye preobrazovaniye sotsialnoi prirody kazakhskogo krestyanstva* (Socialism and the Fundamental Changes of the Social Nature of the Kazakh Peasantry), Alma Ata, 1969; T. A. Kary-Niyazov, *Ocherki istorii kultury Sovetskogo Uzbekistana* (Essays on the History of the Culture of Soviet Uzbekistan), Moscow, 1955; A. K. Kanapin, *Kulturnoye stroitelstvo v Kazakhstane* (Cultural Construction in Kazakhstan), Alma Ata, 1964; O. Kuliyev and others, *Istoricheskiy opyt osushchestvleniya kulturnoi revoliutsii v respublikakh Srednei Azii i Kazakhstane* (The Historical Experience of Carrying Out the Cultural Revolution in the Republics of Central Asia and Kazakhstan), Ashkhabad, 1962; A. A. Altmyshbayev, *Nekotoryye osobennosti formirovaniya i razvitiya sotsialisticheskoi kultury narodov Sovetskogo Vostoka* (Some Specific Features of the Formation and Development of Socialist Culture of the Peoples of the Soviet East), Frunze, 1959, etc.

²⁵ J. Kleer, *Zacofanie i rozwoj* (Analiza porównawcza rozwoju republik azjatyckich ZSRR oraz Afganistanu, Iranu i Turcji), Warsaw, 1970.

²⁶ *Ibid.*, p. 78.

²⁷ *Ibid.*, p. 199.

²⁸ Figures for 1960/61.

²⁹ Figures for 1964/65.

³⁰ Figures for 1964/65.

³¹ V. I. Lenin, *Collected Works*, Vol. 26, p. 448.

³² 24th Congress of the CPSU, Moscow, 1971, p. 100.

CHAPTER 2

CULTURAL CHANGES IN THIRD WORLD COUNTRIES

The specific characteristics of the historical development of Asia, Africa, and Latin America have determined the specificity of the tasks they face in the sphere of cultural transformation. Though they undoubtedly have problems in common (the eradication of illiteracy, the creation and improvement of national systems of education and public health, and the achievement of a qualitatively new cultural situation), the ways of solving them differ, not only from continent to continent, but also from country to country, since their initial economic and cultural levels were far from uniform (compare North and Tropical Africa, for example).

In the Latin American countries, which gained political independence in the last century and have made certain advances over a century and a half, the situation is more favourable and the average indices are higher than in Africa and Asia. But first, these comparatively high figures cannot be considered satisfactory, and second, these countries have many complicated problems of their own. Among these we may mention the excessive influence of the Catholic Church over the school system, the problem of educating tribal peoples, etc.

In African countries the main drive is for spiritual decolonisation, and all practical measures in the field of education are subordinated to it. In his speech at the Congress of Africanists (1967) Senegal's President Léopold Senghor stressed the need to turn to one's own cultural heritage, to deepen one's study of it, and to be aware of one's national

peculiarities in order to absorb more fruitfully modern ideas and the elements of industrial society. In such conditions, of course, it is vital to search for optimum ways of developing the traditional culture in combination with the new phenomena of cultural life.

The process of spiritual decolonisation is inseparably bound up with the changes of social psychology and with the provision of opportunities to absorb the achievements of modern scientific and technological thought, and that calls for the overcoming of many difficulties, including the language problem, which is exacerbated in certain African countries by the motley nature of their ethnic composition and the unconformity of ethnic and state boundaries. The profusion and complexity of questions of this kind has inspired the political leaders of some countries to re-examine their respective programmes and to concentrate their attention on the most burning issues of the moment. (Tanzania, for example, has temporarily shelved her plans to introduce universal primary education in order to divert the necessary resources into the secondary and professional education systems.)

More or less the same problems are urgent for most Asian countries, but they have, in addition, their own particular problems to solve, problems arising from the need to overcome the results of the population explosion and from the slow transformation of social relations, retention of religious and traditional social institutions, etc.

Despite the differences in the roads chosen for economic growth and the solution of social problems, all developing countries regard public education as an issue of greatest importance; they cannot consolidate their independence without training their own personnel for all branches of economic and state construction. They all also recognise that education is a most important means of national consolidation; and that in turn calls for changes in the aims incorporated in the old educational system and in its structure, and the creation of conditions for teaching millions of people.

The fight against illiteracy. In 1950, according to the most conservative estimates, there were around 700 million illiterates in the world; by 1970 the absolute number had increased to 820 million (about a third of the world's population), the percentage being especially high in the countries liberated from colonial domination (up to 80-87 per cent in African countries, 67-71 in Asia and Oceania, and more than 40 per cent in Latin America).¹

There are many reasons for this situation: the population explosion caused a sharp rise in population, particularly in the number of school-age children;² in most newly independent countries primary education is not yet compulsory; development of education is being slowed down by lack of money and qualified teachers. But the main reason is probably to be found in the inertia of the social structure of Third World countries.

Despite the various measures their governments have taken to stamp out adult illiteracy, progress is very slow.³ This is illustrated by the following figures relating to the age-group of 15 and older (per cent):⁴

	1960	1970
Africa	81.0	73.7
Asia ⁵	55.2	46.8
Latin America	32.5	23.6

National campaigns to stamp out illiteracy in the Third World have been organised on varying scales and have been conducted in different ways. In Ecuador, for example, where the 1950 census recorded 44.3 per cent illiteracy, mainly among the rural population, compulsory education for all citizens between 15 and 50 was envisaged, but according to the figures for 1969 around 31 per cent of the illiterate population remained untouched by the measures taken; moreover, some 300,000 children between six and twelve (21 per cent of those in that age-group) did not go to school (and were thus potential illiterates). So one can see that there is

no reason to suppose that the plan will be fulfilled in the intended period.⁶

India was the only country in Southeast Asia that did not, after Independence, have a national campaign against illiteracy. In 1961, according to the census, the proportion of illiterates was 76 per cent, and though it fell in the following decade to 70.6 per cent, the absolute number rose from 327 million in 1961 to 380 million in 1971. The average rate of increase in literacy was 4.3 per cent.⁷ This is giving rise to serious concern, as final solution of the problem is being put off for long years to come.

Burma has made certain progress in this field. In 1949 the state-financed General Education Council was founded, which was entrusted with training organisers for a campaign against illiteracy. On completing their special courses the organisers were sent to rural localities to set up cultural and educational centres. In the second half of the 1960s annual summer campaigns began to be carried out to teach the adult population and over the period 1966-1968 over 300,000 people between 15 and 55 learned to read and write and count.⁸

In a number of countries, particularly in Africa, there has been little success in correcting the situation. A conference on co-ordinating anti-illiteracy programmes in African countries was held in Abidjan in 1964. It was proposed to include these programmes in the countries' social and economic development plans as an essential measure, and to finance them from the state budget.

The World Congress on the Eradication of Illiteracy (Teheran, September 1965) advised countries to concentrate on those areas where the biggest advances in economic development had been made and those categories of the population who could use their newly-acquired knowledge in their labour activity. This should lead to a more rational expenditure of extremely limited resources and to an increase in the effectiveness of the investment devoted to combating illiteracy.

The insignificant results achieved after global campaigns in many countries prompted UNESCO to recommend the introduction of a so-called system of functional literacy.⁹ Towards the end of the sixties experimental centres were opened in 13 countries—India, Iran, Egypt,¹⁰ Syria, Algeria, Guinea, Mali, the Malagasy Republic, Sudan, Tanzania, Ethiopia, Ecuador and Venezuela. Governmental organisations in Thailand, Tunisia, the Congo (Brazzaville), Niger, Senegal and Brazil communicated that they intended to model their anti-illiteracy programmes on the functional type.¹¹ Morocco set up a special centre for the workers in the phosphate industry.¹² Niger's national centre for the eradication of illiteracy carried out an experiment in 1973 jointly with UNESCO experts, to teach 15,000 peasants according to a special intensive syllabus, in which radio played a main role. The peasants listened every day to special broadcasts in Djurma, one of the national languages of Niger. The programmes took the form of dialogues between specially trained officials and local people on the most pressing topics—production, daily life and medicine. The workers of the national centre carried out periodic checks on the progress of this important venture. Generalising the results of these experiments will be of no small benefit to other Third World countries, and they will form the basis of UNESCO's recommendations for the present decade.

Over the next few years it is proposed to make wide use of the mass media in adult education. Colombia, Venezuela, Ecuador and Mali all now have several radio centres for combating illiteracy, which broadcast regular lessons. In Egypt, Iran, Senegal, Nigeria and Brazil television is also being used to the same end (though admittedly on a very modest scale). For the future UNESCO plans financing experimental radio and television programmes to be relayed by communications satellites to regional centres in various countries. India had a similar project for 1973-1975, since teaching its vast mass of people is complicated (among other things) by lack of the necessary number of teachers.

The printed word is also being used in addition to radio for educational purposes. In several African countries local language newspapers catering for the village reader appeared simultaneously in 1972. In Mali a monthly paper *Kibaru* (News) began to come out, and in Togo *Gamesu* (The Hour Has Come) is being published in the most widely-spoken language, that of the Ewe people.

The experience of the People's Republic of the Congo on this plane is most interesting. Since February 1972, the department for the eradication of illiteracy has been publishing *Sengo* (The Mattock), a paper for the peasants of the interior. The General Secretary of the Congolese National UNESCO Commission has said that its purpose is to keep the peasants informed of the most important events, and to improve their specialised knowledge on agricultural problems.

To do this *Sengo* prints material from the national information agency, publishes local news, special articles for women and medical advice. Each article contains quite a lot of interesting and useful information. *Sengo* also regularly carries reports on the work of the local administration, on local market prices, and gives advice on the care of cattle.

Another very interesting experiment is being carried out in the Ivory Coast Republic, where television is to be used to teach all school-beginners. The testing of this idea in practice will bring about the elimination of one of that country's most chronic problems, that of organising lessons and training teachers. The teacher's function can now be fulfilled, for example, by a group leader, or simply by the better pupils who have been given the appropriate instruction. Once TV-teaching had been agreed on, other problems, of a technical nature, arose, primarily connected with the absence of electricity in the countryside. In some places battery-powered sets were used, while in the northern desert areas solar batteries proved very effective. With the help of UNESCO experts, syllabuses were worked out and the various materials selected. One "TV teacher" was to replace

hundreds and hundreds of teachers but each lesson had to be prepared with such thoroughness as to keep a dozen educationalists busy. The compiling of syllabuses for more advanced classes is envisaged for the future.

At present the governments of a growing number of Third World countries are taking the organisation of the anti-illiteracy campaign under their control. This was officially announced by Tanzania in 1969; Uruguay has formed a national committee with similar functions; and Algeria (1964) and Tunisia have set up special state committees. The Arab countries declared 1971 Literacy Year. The problem of adult education is being given a definite place in economic development plans. The efforts of the countries themselves, the implementation of certain national programmes (for instance, family planning), and the aid being given by industrially advanced countries and international organisations give certain grounds for hoping that, by the year 2000, the campaign to eradicate illiteracy will be completed throughout the world.

Elementary education. A radical measure capable of tearing up the roots of this persistent phenomenon is the development of the educational system as a whole. The Third World countries' period of independent life has seen important changes in this area. There has been a democratisation of education, especially of elementary education, expressed in its increased accessibility to various social strata and groups, and in a sharp reduction in the number of private schools. As a consequence there has been a marked growth (in absolute terms) in the number of students at the different levels of education (Table 2).

By the mid-1960s they had nearly all begun developing short-term and long-term plans both for education¹³ and for the training of national specialists, had increased their budgetary assignments for these purposes,¹⁴ passed laws on universal elementary education, and had achieved such an expansion of the network of educational establishments as could earlier not have been dreamed of.

Table 2

Number studying in Asian, African
and Latin American countries, 1950-1970

Region	Kind of Education	1950		1970	
		Number enrolled (000s)	Per cent of total	Number enrolled (000s)	Per cent of total
World total	Elementary	177,145	80.0	343,219	71.1
	Secondary	38,040	17.2	113,197	23.5
	Higher	6,317	2.8	26,065	5.4
	Total	221,502	100.0	482,481	100.0
Asia*	Elementary	53,303	79.6	138,789	76.9
	Secondary	12,658	18.9	36,343	20.1
	Higher	1,007	1.5	5,429	3.0
	Total	66,968	100.0	180,561	100.0
Africa	Elementary	8,511	91.2	32,389	85.4
	Secondary	745	8.0	5,075	13.4
	Higher	71	0.8	444	1.2
	Total	9,327	100.0	37,908	100.0
Latin America	Elementary	15,379	88.6	43,314	78.0
	Secondary	1,706	9.8	10,723	19.3
	Higher	279	1.6	1,524	2.7
	Total	17,364	100.0	55,561	100.0

Source: *UNESCO Statistical Yearbook*, 1972, Paris, 1973, pp. 68-72.

* Excluding the People's Republic of China, the Korean People's Democratic Republic, and the Democratic Republic of Vietnam.

The elementary school is becoming a mass school and it is being freed from the direct influence of the church. The curricula and syllabuses already incorporate serious changes, mainly concerning the language of instruction,¹⁵ and study of the history and culture of the native country; and there have been attempts to introduce the fundamentals of handicrafts and agriculture into the school course so as to bring the school as closely as possible to life.

These undoubted achievements are extremely important today and can play an immense role in the next decade in influencing the economic and social development of these states; but we cannot yet describe the situation as satisfactory. The wide spread of education has brought with it difficulties and complications caused by the shortage of teach-

ers, and their low qualifications, the lack of textbooks, teaching aids and school buildings, and the imperfections of the curricula, and have led to an overall lowering of teaching standards, which has caused several countries to take such measures as the setting of quotas on entrants to secondary educational establishments. In Tunisia, for example, only 30 per cent of those completing elementary school can count on continuing their studies.¹⁶

Measures like that, of course, cannot alter the existing situation. Education needs many materially secure specialists, but owing to the limited financial resources of these countries, teachers' pay is extremely low. So it is not surprising that the best trained teachers are leaving the schools and trying to find better paid work. The countries are often forced to resort to the services of foreigners, which cost immeasurably more. The proportion of foreigners among senior teaching staffs in Nigeria reached 82 per cent in 1963/64; in the Ivory Coast in 1965 this figure was 93.5 per cent (in secondary schools).

Elementary school teachers in general earn much less than their colleagues in secondary establishments. The differential is especially marked in Uganda and Nigeria (6.5 and 5.8 times more respectively).

Although most countries have proposed to introduce universal, compulsory, free elementary education, it cannot really be done before the end of the seventies or eighties.¹⁷ The numbers covered by elementary education in most of them, especially in rural areas, still remain small. Thus, only 11 per cent of the children between five and fourteen attended school in Afghanistan in 1965, in India 40 per cent, in Dahomey 20 per cent, in Ghana 70 per cent, in Guatemala 35 per cent and in Mexico 60 per cent.¹⁸

Female education, a problem closely linked with the social and economic advance of women, has as yet not been given its due place in the cultural programmes of developing countries, though positive changes can be seen in India and Sri Lanka, and certain advances can be observed in Iran, Tur-



A lesson at a primary school in Bangladesh

key, Syria, Algeria, Egypt and Latin American countries. Nevertheless, even in the latter half of the sixties the proportion of girls in elementary schools was generally less than 50 per cent. In Afghanistan, in 1967, girls were only 14 per cent of the pupils in their age-group; in Nepal the figure was also 14 per cent, in Pakistan 27 per cent, in India 33 per cent, in Iraq 29 per cent, in Egypt 39 per cent, in Somalia 23 per cent, in Mauritania 23 per cent, in Togo 30 per cent, in Guinea 31 per cent, in Kenya 38 per cent, and in Brazil 50 per cent.¹⁹ The problem continues to be acute in some Moslem countries, where the education of girls is obstructed by traditions which are supported by reactionary elements among the clergy.

The development of the school system is greatly held back by such phenomena as pupil drop-out and year-repeating. According to UNESCO data drop-out in the fourth year of study in the various parts of Brazil in the sixties was from 50 to 81 per cent of every 1,000 pupils enrolled in the first class. In Gabon it was about 25 per cent in the third year, and more than 50 per cent in the sixth year. Drop-out in the schools of the Central African Republic was 76 per cent at the end of the sixth year. In Dahomey, as was reported to the 16th UNESCO conference, only 0.7 per cent of the children who entered the first grade in 1968 were likely to complete their full 13 years of schooling while 50 per cent of the children on the school registers would not even finish elementary school.²⁰ The situation is much the same in Asian countries. Even in Turkey, where education has received great attention, only about 35 per cent of the entrants finish the village elementary schools.²¹ Thus it is estimated that only a third of the number possible (taking the present level of expenditure in education into consideration), if drop-out and repetition alone were eliminated, actually finished school in the developing countries. In Latin American countries, where the general situation in elementary education is much better than in Afro-Asian countries, these problems are no less acute, especially in the countryside. The percentage of

drop-outs among schoolchildren in Colombia (1972 data) was 72.7 (52.7 in urban areas and 96.3 in rural ones), in Guatemala 47.7 (50.4 in urban areas, 96.5 in rural ones), and in Panama 37.7 (19.3 in urban areas, 54.7 in rural ones).

By way of experiment several countries (Malaysia and South Korea) adopted a system of automatic transfer from class to class (irrespective of success). It certainly brought to a lowering of expenditure, but at the cost of loss of academic quality. It is extremely important to raise the efficiency of education, because that, to a certain extent, also determines the success of social and economic development plans and the possibility of making use of modern advances in science and technology.

Secondary and vocational education. By the end of the 1960s young sovereign states faced a need to balance the condition and the direction of their educational systems, that is, to tackle the problem of planning labour resources at all levels. In the first period after independence the main attention of governments was directed towards expanding elementary and higher education, which led to a critical situation. Hundreds of thousands of teenagers who had completed elementary education but had no possibility of continuing their studies found themselves on the street with no outlet for their abilities,²² creating a complex social problem of employment of youth.²³ At the same time a shortage of secondary school-leavers hampered the development of higher education, not to mention the fact that the lack of intermediate personnel had a very drastic effect on the economy.

In this connection attempts were made to redistribute budget allocations between the levels of education, and, very important, steps were taken to re-examine the content of teaching, primarily as concerned the cycle of natural and technical disciplines, mathematics and other exact sciences. Many countries showed interest in the working of the USSR's educational establishments, including vocational and techni-



Going to school (Morocco)

cal schools that also provide a general secondary education, and the special schools.

Vocational education is still in the period of establishment in Asian, African and Latin American countries, and it is still too soon to forecast substantial changes, though there has been a marked growth in the number of pupils, as is indicated by the following figures for separate countries²⁴:

India	1963	340,000	Ghana	1964	13,967
	1965	450,101		1966	17,587
Nepal	1965	6,479	Senegal	1965	8,270
	1966	7,514		1967	11,270
Iran	1965	14,500	Mexico	1966	150,914
	1967	16,239		1967	163,199
Algeria	1965	34,685	Venezuela	1964	82,100
	1967	38,877		1967	115,794
Zaire	1964	17,334	Guatemala	1964	5,495
	1966	28,951		1967	10,352

Undeniably the countries of Latin America are ahead of those of Africa and Asia in the development of vocational education, which is explained by their higher level of economic development. In some countries progress in this field is linked with the considerable increase in output of minerals, oil, copper ores, etc. (in Venezuela and elsewhere). And more and more attention is being paid in national development plans to expanding vocational education.

Difficulties arise in the way of vocational education, caused by a shortage of teachers in the natural sciences and technical disciplines and by poor co-ordination of economic growth plans with the possibilities of the educational system. The seventies, it would seem, are being marked by a quest for optimum variants of expanding education in conjunction with the growth of industry and agriculture.

The need for skilled workers is already forcing governments to search for ways of accelerating their training. To this end full and incomplete secondary schools have been reformed, and special subjects included in the curriculum. Thus, in 1968 in Guinea, vocational training was introduced into the school course for children and adolescents. Other African countries are also tending to follow this example. In Tanzania a scheme was proposed to put schools and colleges on a self-supporting basis; even if such a project were introduced, it would hardly be successful. Mahatma Gandhi urged similar ideas for India in his time but they proved impracticable.²⁵ Several countries are introducing a system of factory apprenticeships, but the practice is encountering

opposition from entrepreneurs who do not want to spend money on it.

National plans for raising agricultural productivity and improving food resources have made the Third World governments begin to take an interest in recent years in the development of agricultural education. This can be seen in the opening of agricultural colleges and schools in nearly every country in Asia and Latin America. In Africa, where such opportunities are still lacking, study of basic agriculture is included in the school curriculum.

The Philippines has had distinct success in expanding its network of establishments of this kind, which is linked with the active introduction of the modern advances in agronomy ("the green revolution"), but in India and Indonesia the number of these establishments is far from adequate (Table 3).

Table 3

Agricultural Education in Asian Countries

Country	Year	Number of schools		Number of pupils
		state	private	
Afghanistan	1968/69	2	—	419
Burma	1968/69	6	—	598
India	1964/65	95	—	8,134
Indonesia	1968/69	151	60	8,533
Iran	1968/69	22	—	2,249
Nepal	1969/70	1	—	37
Thailand	1969/70	17	—	4,127
Philippines	1968/69	108	14	39,197
Sri Lanka	1968/69	1	—	25

Source: UNESCO, *Agricultural Education in Asia*, Paris, 1971, p. 26.

The need to apply agrotechnical knowledge to daily farm practice has prompted some countries (India, Iran, Turkey, the Philippines, Brazil, Mexico, etc.) to introduce a form of instruction new to them, i.e., one- and two-year courses. In

Kenya, the training of peasants on courses, followed by regular agrotechnical advice, has given an increase in the efficiency of agriculture in several regions.

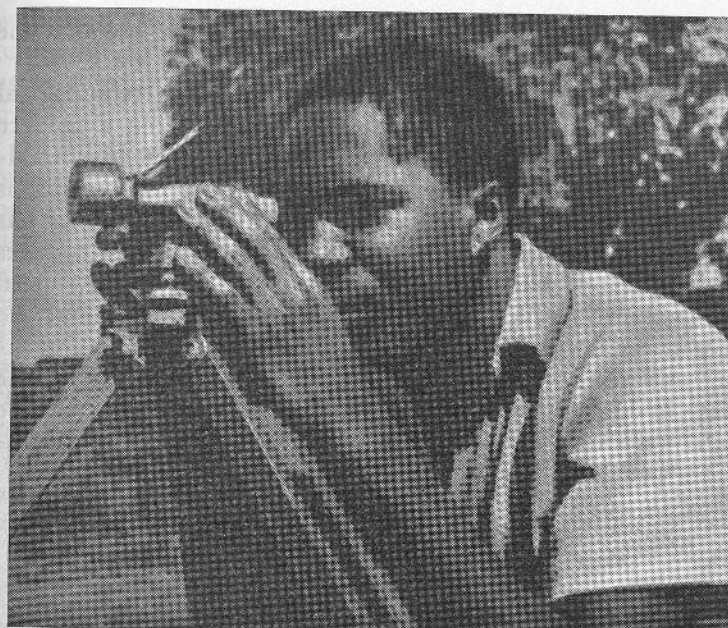
Indonesia, Iran and the Philippines have opened secondary technical schools in connection with their newly-created fishing and forestry industries.

The outlook for the development of educational systems depends on the solution of many important questions of principle. In particular, the question of the structure and type of teaching establishment for the next ten or twenty-five years is acquiring no little importance, since attempts to settle the specialisation of a particular school without considering the interests of the pupils and without the appropriate material equipment have ended in failure.

By now it has become obvious that the reorganisation of teaching cannot be the prerogative of educational workers alone. Industry and agriculture are equal partners when it is a matter of improving its quality.

An entirely new conception, that of "continuing education", is taking shape in our day. Its essence is that the process of teaching in school should develop habits of independent work in pupils, that will enable them to supplement their knowledge throughout their life and to "digest" the constantly increasing volume of information. The problem also faces the industrially advanced countries, but they have immeasurably greater human, technical and financial resources for its solution than the developing countries. For the latter the achievement of continuing education requires them to unite their forces so as to carry out programmes not only of school education but also of extra-mural education.²⁶

It is no accident that all over the world school curricula are being reviewed from the aspect of introducing new material and getting rid of out-of-date matter. Underlying this reconstruction is the conception that even children attending elementary school are capable of mastering complicated subjects (algebra, the rudiments of economics, etc.). Newly-independent countries, of course, cannot ignore this process.



A young geodesist, Tanzania

Very relevant for them is the introduction of courses on the history and culture of their native land into curricula that would accelerate the spiritual decolonialisation of young people.

The 16th Session of the General Conference of UNESCO (1970) set the task of extending elementary education to all the world's children by 1980. To do that, bearing in mind present rates of population growth (by 1980 the world's population will be 4,500 million) means that in a country where 50 per cent of children attend elementary school the number of schoolchildren will increase by 160 to 180 per cent. That is posing very complex problems of finance and staff and is forcing governments to bend efforts to providing the material basis for education. UNESCO experts estimate, however, that by that time, between five and fourteen mil-

lion children will still not be attending school, and that the number of illiterate adults will be 820 million.

Higher Education. With the scientific and technological revolution and the restructuring of economies on a modern technological basis, the demand for highly trained specialists, above all of engineering personnel and technicians, is growing rapidly. The result for Third World countries has been a sharp increase in the number of universities, colleges and institutes, although the increase has not always been accompanied with the necessary material support; and the role of the universities as centres for training national teaching and scientific staff has been enhanced. An idea of the state of higher education in some of these countries can be obtained from the following figures on the number of students per 100,000 population at the end of the 1960s.²⁷

Afghanistan	42	Uganda	30
Burma	170	Tanzania	15
India	374	Zaire	50
Iran	260	Brazil	464
Lebanon	1,300	Mexico	448
Nepal	152	Peru	777
Iraq	450	Colombia	370

For many states the 1960s were years of a breakthrough in the reorientation of higher education, a reorientation taking the needs of the economy into consideration in economic planning and in the programming of the dynamics of labour resources. Almost everywhere government policies envisaged preferential expansion of natural scientific and technical education (Table 4).²⁸ There was a marked increase in the number of agricultural institutes, and in Burma, Indonesia, Iran, Nepal and other countries forestry institutes (or faculties) were opened. Construction of Ghana's second technological institute, designed for 600 students, began in Kumasi, the centre of Ashanti province (the first having been built in Accra). The project's cost is 1,550,000 dollars. It

will train engineers for mechanical engineering, radio and television, welding and construction. (In the preceding years, as in colonial times, educational establishments in the main trained people in the humanities.)

In Egypt, for example, 58,200 students were studying the humanities in 1960/61, while the natural sciences and technological faculties had 34,000 students. The corresponding figures for 1968/69 were 68,400 and 71,400. Even in India, where the re-structuring of higher education is proceeding extremely slowly, in the humanities students declined from 45.9 per cent in 1950/51 to 41.4 per cent in 1967/68. It must be said, however, that the former situation remains unchanged in many countries. One reason may be the high cost of training students in natural sciences and technological faculties. UNESCO figures indicate that instruction in the humanities costs one-seventh to one-tenth of what it does in natural sciences and technology.

Despite many Latin American countries having a long tradition of higher education (the first university in Mexico was founded in 1551 and in Argentina in 1613), the reorganisation of higher education and its adjustment to the tasks of national development only began after the Second World War. New higher educational establishments were founded, the number of students in scientific and technological disciplines increased, syllabuses were re-examined, and contacts were established with the best higher educational establishments in Europe and America.

In Latin America qualified cadres are trained mainly in universities. By 1970, 90.2 per cent of students had studied at universities, 2.4 per cent at higher technological institutions, and 7.4 per cent had been educated in teacher training colleges with higher educational status. Latin America is a leading area in the world for rate of growth of the number of students in higher education; it is estimated that their number will reach three million by 1980.

The problem of national engineering and technical personnel persists in the seventies. The UN estimated that the

Table 4

The Distribution of Students by Faculties
in Selected Third World Countries

Country	Year	All students	Faculty			
			Natural sciences	Engineering & technology	Agriculture	Medicine
Indonesia	1952	10,041	450	2,576	631	2,780
	1967	119,039	4,259	11,444	5,449	10,245
Thailand	1949	30,143	999	476	302	812
	1967	38,204	1,695	2,292	2,515	5,045
Iran	1970	55,315	2,889	4,645	3,626	6,347
	1950	5,624	554	200	228	2,102
	1967	58,774	3,785	3,265	1,479	6,821
	1970	74,708	9,876	14,008	3,162	10,000
Algeria	1950	4,563	759	—	—	1,327
	1968	10,681	1,662	489	87	2,679
Kenya	1969	12,929	1,997	604	147	3,809
	1960	611	164	47	25	52
	1967	1,520	241	293	174	26
	1970	2,789	335	425	265	226
Nigeria	1950	324	166	—	1	44
	1967	8,067	1,078	424	497	867
	1968	9,775	1,357	550	685	1,021
Brazil	1954	65,633	386	7,326	1,899	17,262
	1967	212,882	6,915*	31,084	7,847	33,152
	1970	430,473	41,124	48,118	10,134	55,222
Mexico	1961	94,073	5,369	18,607	2,859	17,823
	1967	178,436	10,207	41,361	5,317	29,959
	1970	247,637	13,224	62,501	8,409	37,125

Source: UNESCO Statistical Yearbook, 1972, pp. 368-403.

* 1965.

developing countries of Asia had to train 256,000 scientists and engineers by 1975, for Africa the number was 31,000 and for Latin America 107,000.

The International Labour Organisation²⁹ estimated that, by 1975, there would be a considerable increase in the demand for engineers in the textile and pulp and paper industries. When determining their trends of economic development, many countries have to reckon with the personnel needs of projected enterprises. The number of jobs in heavy in-

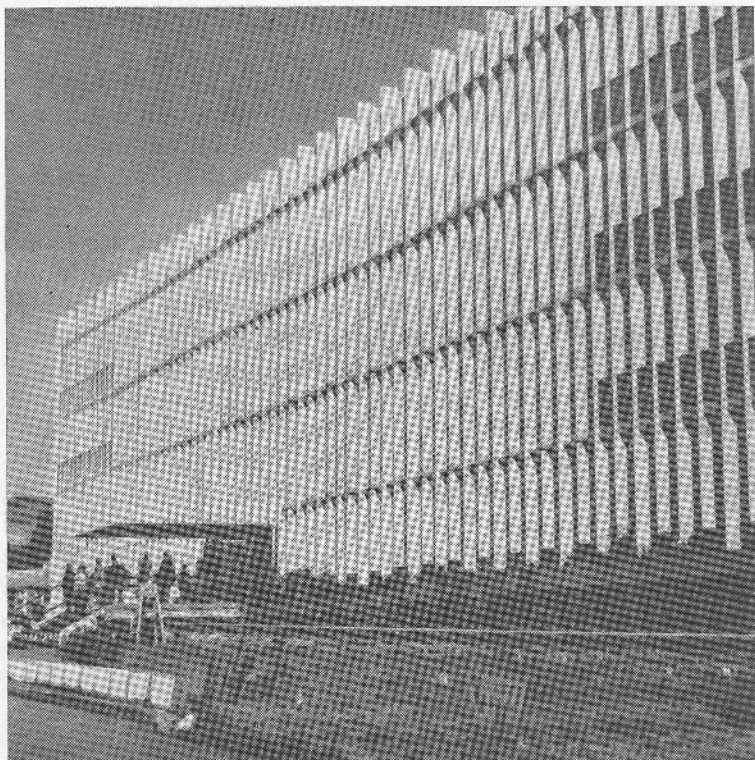
dustry is much smaller than in light industry for the same expenditure of resources.

Despite the fact that the need for trained personnel is far from met, the problem of jobs for skilled manpower and of unproductive employment of people with higher education has arisen in all Third World countries. The problem is so serious that some governments have been forced to regulate the number of students in higher and secondary education so as not to aggravate the unemployment situation.³⁰

The fact is that this situation is due, to a certain extent, to the upsetting of the proportion between the number of those with higher qualifications to those with secondary ones. The optimum is considered to be between 1 : 3 and 1 : 5 (depending on the profession concerned and economic conditions in the country). A reverse proportion, as we said earlier, can now be observed. But the main reason is the low rate of economic growth in developing countries and lack of the necessary planning of human resources.³¹ It is this that leads to the situation, so common in the countries being studied, as an oversupply of, for instance, office workers, and an acute shortage of doctors, teachers and technicians, a heritage of the colonial period.

The solution is to be found in economic decolonialisation,³² the elimination of monocultural development in the economy, the introduction of radical social and economic transformations and the creation of a national scientific and technological potential capable of applying the advances in science and technology.

An urgent task facing the higher schools is that of improving the standards of student training. This depends in no small measure on the entry conditions. The experience of a number of countries in Latin America,³³ Africa, and Asia (e.g., India and Egypt) shows the need for stricter selection of students and for raising the demands made upon them. The high drop-out rate and the frequently unsatisfactory standard of young graduates is prompting the educational



The first higher educational establishment
in Ethiopia—a university

authorities to insist on these demands, but circumstances of a political nature often make their implementation impossible.

Special significance is being attached to the re-examination of the structure and content of curricula. Every country, whether it is constructing or reconstructing its national system of education, will have to choose between duplicating the old, "established" syllabuses and creating new ones, taking its specific character and interests into consideration.



In a vocational school, Guatemala

Unfortunately, most countries have not yet faced up to this problem. On the one hand, they do not have the necessary resources and personnel, and on the other hand, they frequently do not know what direction to take. So a paradoxical situation arises: because of the democratisation of education, hundreds of thousands of members of non-élite groups have been drawn in, but the content of teaching is still mainly based on the canons of the last century. Dakar University has more than 3,000 students of 42 nationalities. The faculty of law and economics pays much attention to study of Roman and French law, various Western bourgeois theories are

studied, but no work is done on African economics. Students are feeling a need for knowledge of the history, geography, sociology, cultural history and psychology of African peoples. The proportion of the exact sciences in the curricula is low. Expressions of student opinion in African countries in recent years show that students are worried by the problems facing the universities and are unwilling to put up with a situation in which the national system of education is national in name alone but in fact bears little relation to the real needs of the African situation. There is no doubt that only after radical reform will the educational system be in a po-



Lycée students, Brazzaville

sition to supply graduates trained for active participation in the reconstruction of society.

One way of solving the problem of raising the standard of teaching is the joint preparation of university syllabuses by several countries, which has already been tried with some degree of success. In 1963 the Federal University of East Africa was founded, which unites the higher educational establishments of the capitals of Uganda, Kenya and Tanzania. Within its framework there is specialisation, so that Kampala trains doctors and agriculturalists for all three countries, while technicians, veterinaries and builders are trained in Nairobi, and lawyers in Dar-es-Salaam.³⁴

Brazzaville University, which was founded in the colonial period, has today become a centre for training qualified personnel, not only for the People's Republic of the Congo, but also for neighbouring countries. Educational establishments based on it have been set up in Gabon and Chad with the help of its advisors. A higher council of Central African universities has also been formed as the consultative body of the higher educational establishments in the People's Republic of the Congo, Gabon, the Central African Republic, and the Chad Republic.³⁵ This move is very promising, and one can see it as an element of collaboration on a broader plane.

Today's situation has faced Third World countries with the problem of regional integration so as to solve their cardinal task of eliminating economic dependence.

Achieving such integration, of course, involves overcoming fantastic economic and political difficulties. The weakness of individual countries, however, obliges them to seek support from similar, neighbouring countries. The implementation of certain economic programmes, moreover (the building of power sources, communications, irrigation systems, etc.), can be made easier by pooling efforts.

Progress to date is very modest, and the attempts to form permanently functioning regional unions cannot be considered successful. But there are grounds for supposing that

conditions will force many countries to take steps toward integration (in some cases this will be encouraged by the unconformity of ethnic and state boundaries). The statements of government leaders, and the development plans for 1970-1975 and longer periods, show its importance and the practicability of its realisation. Integration has great significance for the success of such cultural reforms as the carrying out of individual projects in the field of public health, the development of science, the mass media and the arts (the cinema).³⁶

Science. The central problem for countries liberated from colonial dependence continues to be the overcoming of technical and economic backwardness, and it is now already clear that this can only be done by making use of the achievements in world scientific thought and by obtaining the latest information.

In these times, when science is becoming a direct productive force³⁷ and a vital instrument determining economic growth rates, effective struggle for genuine independence is impossible without the development of scientific research. The once prevalent view that it is more profitable to import its results has been a brake on social progress in many Third World countries. Lack of the necessary means, of laboratory equipment and of traditions in a number of areas of research, however, the low level of remuneration for research workers, and the unsatisfactory standards of professional training in higher educational establishments make the job of building national science extremely difficult.³⁸

The Afro-Asian countries can be divided into two groups as regards scientific development.

The first group comprises India, Pakistan, Egypt, Burma, Ghana, Sri Lanka, Kenya and Nigeria, where there are already certain traditions in research work and the training of scientific workers. The countries of the second group, which includes Guinea, Chad, Gabon and Nepal,³⁹ have no or almost no people of their own with higher qualifications.

In Latin American countries, which have suffered both from political instability and economic dependence, the development of science was for long not actively supported by the state. And the Catholic Church has had considerable influence on the character of the social and cultural changes in them.

A major role in the development of science in Latin America has been played by the Argentine, Mexican and Brazilian scientists and scientific societies.

Since 1898, on the initiative of the Argentine scientific society, congresses uniting the scientists of all South America have been held.

In 1968 Argentina had more than 50 research institutes, 130 scientific societies, and a government body to co-ordinate and direct research was set up. The universities and other higher educational establishments are also involved in research.

A National Research Council, responsible to the President, was set up in Brazil in 1951, with commissions on atomic energy, space research and other fields. But there are only 3,000 scientific workers in the country (including personnel engaged in teaching and in scientific organisation).

The peculiarities of the Mexican economy, with its combination of agriculture and extraction industries (silver and non-ferrous metals), determined the priority development of the biological and geological sciences, in which Mexican scientists have had considerable success; but in general the development of science still does not meet the country's needs.

The planning of science can be an important step in the creation of the scientific and technological potential, and this has already found expression in national programmes for economic advance in the seventies. It involves defining the main directions of research and its organisation, the training of specialists and the founding of scientific and information centres. It will be greatly fostered by setting up centres in the universities for expanding research, primarily

in those fields that are most promising as regards the exploitation of natural resources. The research, as a rule, is financed by the state. UN experts consider that by 1975-1980 the governments of Asian countries will be able to allocate about 1.0 per cent of their gross national income for scientific and technological development, African countries 0.5 per cent, and Latin American countries more than 1.5 per cent. Some countries (India, Iran, Brazil, Mexico) are also trying to attract private capital.

A real means of developing science would be joint regional co-operation in this area, the opening of united information and documentation centres, laboratories and other institutions. "We consider," said M. D. H. Jayawardena, the Sri Lanka delegate at the UNESCO conference on scientific and technological development in Asian countries (Delhi, 1968), "that there is scope for fruitful . . . collaboration among countries with whom we share a similarity in social and economic standards, and physical and human resources."⁴⁰ This is a promising line of development for a number of Asian, African and Latin American countries, particularly as concerns exploiting natural resources, expanding agriculture and improving medicine, and will allow them to economise on their otherwise not so abundant resources.

Various joint bodies are currently functioning, including the Asian Advisory Council for Industrial Research, the Patent Office under the Afro-Malagasy Union, and several scientific and technical bodies within the framework of the Latin American Free Trade Zone. The Indian Agricultural Research Institute in New Delhi trains post-graduate students not only for India but also for Burma, Sri Lanka, Malaysia, Nepal and Thailand. The International Rice Research Institute (in the Philippines) conducts research on behalf of a group of Southeast Asian countries. The government of Pakistan has proposed joint work with Iran and Turkey in the fields of agriculture and mass media.

The contemporary scientific and technological revolution is having a positive effect on the economies of the Third

World countries, enabling them to solve complicated technological problems and altering the pace of scientific and technological progress. Among its most important trends the following are of special significance to the newly-independent states:

1. Study of the nature of biological processes and means of deliberately influencing them.
2. Application of the most up-to-date methods in power engineering, and in the production and processing of industrial raw materials of all kinds.
3. The wide use of computers in all spheres of human activity.
4. Concentration of the efforts of humanities scholars on sociological research into the national economy and culture in order to speed up the process of spiritual decolonisation and national integration.
5. Research into the biosphere, since defence of the environment and strict control over the exploitation of natural resources are no less pressing problems today for the developing countries than for industrially advanced ones. The environment today is not merely a system of static mutual relations between living creatures and their natural habitat, but a complex symbiosis of biological, social, psychological, economic and cultural factors forming a dynamic ecological structure.

Scientific advance in Third World countries depends on the correctness of their chosen line of development, their financial possibilities and the pace of social transformations. And, as before, the primary problem is that of expanding the training of qualified national cadres.

The problem in itself is extremely complex, but it is further complicated by what has been called the "Brain Drain", accompanied by the mass migration of scientists and specialists.⁴¹ Migration to the USA has been very heavy. Incomplete figures indicate that about 85,000 doctors, engineers and other specialists moved to the United States between 1949 and 1969, including many from African, Asian, and

Latin American countries. In 1965, even according to American official statistics, their number was 3,700 (out of 11,700). In 1966 45 per cent of the specialists emigrating to the USA were from Third World countries.

The Brain Drain has become a serious social and economic problem for these countries. In the first place, it is usually the most talented and promising workers who emigrate, those who are, as it is, in short supply; in the second place, the developing countries suffer immense losses since they do not recover in services rendered the expenditures on the training of these specialists (amounting to approximately 20,000 dollars per head). It has been estimated, for example, that the emigration of Camerounian specialists to France between 1967 and 1969 cost the Cameroun 520 million African francs, at a time when 67 per cent of its university teachers were foreigners!

The moral damage to the young national intelligentsia is also great. Whatever the explanations for this phenomenon (quite enough have been advanced in recent years, especially by spokesmen of the countries actively pursuing this policy), one can say that in essence it is an aspect of neo-colonialism. Its scale and the serious effects it is having on Third World countries have forced them to turn to international organisations, and it was discussed at the 20th and 22nd sessions of the UN General Assembly.

The growing interest of the imperialist powers in the problems of cultural resurgence in developing countries deserves attention. Neo-colonialism is striving to take control of their national renaissance and to exert a decisive influence on the education of young people, rightly seeing them as the decisive force that will determine the development of their countries in the next decade.

There was a marked increase in the number of foreign teachers in these countries in the sixties (more than 100,000), and by the end of that decade around 110,000 students from Third World countries had been trained in the USA. There was a marked intensification of efforts by the FRG, Japan,

Britain, Australia and Holland, all of which allocated extensive financial and human resources to this purpose.

It is no coincidence that some Third World countries are now limiting the number of foreign scientists to be invited extra to plans for scientific and technological co-operation, and restricting the number of their own specialists going abroad. In India there is wide discussion on the question of instituting conditions to assure their return. Pakistan's third and fourth five-year plans posed the task of drawing eminent Pakistani scientists into the work of the home universities.

The activity of certain organisations, the Peace Corps, for instance, is regarded as undesirable by a number of countries (Guinea, Zambia, Nepal, Sri Lanka, etc.). It is indicative that even in circles close to US top rulers voices are more and more often being heard criticising the nature of American "aid", the main purpose of which is to make political capital, and not at all to promote the growth of the developing countries' economies. Lack of the needed resources and a complex political situation, however, do not permit the latter to completely refuse aid from imperialist powers.

UNESCO aid. The United Nations' specialised international organisations like UNESCO, WHO (World Health Organisation), ILO (International Labour Organisation), etc., working within the scope of the technical aid programme, have had a marked effect on the training of national cadres. A leading role in the development of education, international scientific and cultural co-operation, and the propagation of peaceful ideas is played by UNESCO, which now embraces more than 130 member-states.

A few facts and figures will give an idea of its work. Between 1960 and 1970 it undertook 167 projects costing 658 million dollars.⁴² In Latin America, for example, the carrying out of the project to develop elementary education (1957-1967) brought into being 84,000 elementary schools

and 1,500 teacher training centres, and the percentage of teachers with inadequate qualifications fell from 53 to 37.

UNESCO gives advice on educational planning, directs the dissemination of pedagogical information and the work on improving the content of school curricula, and national campaigns to eliminate illiteracy.

The 16th Session of UNESCO's General Conference (November 1970) adopted a five-year programme envisaging a gradual transition from the educational problems, that were the main concern of the moment, to problems of scientific and cultural development. It saw as its task the opening of institutes and laboratories and the provision of the necessary equipment, the extension of contacts between scientists, the propagation of scientific and technological knowledge, so as to encourage introduction of the latest advances into the national economy, and so on. It proposed to take part in the creation in the near future of a UN world scientific and technological information system and in work on the unification of scientific terminology. With its aid centres for African studies have been founded in Cameroun (linguistics and African culture), in the Chad Republic, Gabon and Mali (humanities institutes), and in the universities of Ibadan, Addis Ababa and East Africa.

A function of UNESCO is the convening of international and regional congresses, symposiums and meetings. Among those deserving mention are the Asian conference on science and scientific co-operation, the conference on educational problems in African countries, the international symposium — V. I. Lenin and Problems of the Development of Science, Culture and Education, the Third Regional Conference of Ministers of Education and Ministers Responsible for Economic Planning in the Arab States, all falling within the UN International Education Year (1970).

It has also made a considerable contribution to work on the preservation of cultural and artistic monuments in Greece (the Parthenon), India (the Ajanta caves), Iran, Syria, Mexico, Egypt and other countries.

On the negative side of UNESCO's activity, we must note its excessive expenditure on upkeep of its apparatus. There is also no doubt that the policies of Western powers has left a definite mark on many of its decisions. The stand of the USSR and other socialist countries, however, helps to modify the political bias of its activity. The Soviet Union, which is interested in speedy eradication of the vestiges of colonialism, actively co-operates in establishing forms and methods of extending aid to young sovereign states, and in developing and carrying out measures in the cultural field. Its proposals in international organisations invariably find a response from the representatives of these countries.

Information media. Every year the mass media acquire a greater role in Third World countries. Radio and television are seen by state authorities as a most important instrument of ideological influence,⁴³ which accounts for the rise in expenditure on their development. A consideration, too, is the possibility of using radio and television in the running of literacy centres and retraining centres for teachers and for propaganda on sanitation and hygiene. In the current decade international organisations are helping prepare experimental regional educational TV programmes (so as to reduce per capita expenditure). The first positive experience of this kind gave rise to wide-ranging projects. It is still hard to evaluate the effectiveness of this sort of venture, but its significance is obvious when we remember the lack of teaching staff, classrooms and visual aids.

At the same time these projects can help capitalist powers to advertise the "success" of capitalism. It was not for nothing that the USA proposed the creation of a system of "teaching" satellites to be serviced by specially trained American experts. Even UNESCO was forced, at its November 1970 General Conference, to point out the potential danger of some countries foisting their cultural, educational and political conceptions onto other countries through satellite communications.

Many Asian, African and Latin American countries have

Table 5

Number of Radio Sets in Selected Countries
(1950 to 1970)

Country	Radio sets (000s)						Radios per thousand inhabitants					
	1950	1960	1965	1966	1967	1970	1950	1960	1965	1966	1967	1970
India	546	2,148	5,401	6,485	7,579	11,837	1	5	11	43	15	22
Indonesia	213	678	—	1,250	1,500	13,796	3	7	—	42	14	114
Thailand	—	—	—	2,765	—	2,775	—	—	—	88	—	87
Turkey	362	1,352	2,443	2,637	2,789	3,072	17	49	78	83	85	87
Philippines	79*	600	619	639	—	1,633	4*	22	19	19	—	45
Japan**	9,193	12,440	20,425	24,787	25,466	25,742	111	133	209	251	255	255
Egypt	264	1,500	1,613	—	—	4,400	13	58	54	—	—	132
Senegal	—	125	—	—	265	268	—	47	—	—	71	72
Tunisia	65	170	—	370	375	388	19	41	—	83	82	77
Venezuela	218	1,250	1,660	—	1,676	1,700	44	186	190	—	179	164
Colombia	500	1,971	—	—	2,217	2,100	44	139	—	—	115	105

Source: *Statistical Yearbook, 1971*, pp. 814-19.

* 1949.

** Data for Japan are given for comparison.

Table 6

Number of TV Sets in Selected Countries
(1953 to 1970)

Country	TV sets (000s)						Number of TV sets per 1,000 inhabitants					
	1953	1960	1965	1966	1967	1970	1953	1960	1965	1966	1967	1970
India	—	—	0.8	4	6	25	—	—	—	—	—	0.05
Indonesia	—	—	45	46	54	90	—	—	0.4	0.4	0.5	0.7
Iran	—	38	110	130	131	250	—	2	5	5	5	9
Thailand	—	60	200	210	—	241	—	2	7	7	6	7
Turkey	—	4	1.6	2.5	—	25	—	0.04	0.05	0.08	—	0.7
Philippines	3.5*	38	120	160	190	400	0.2*	1	4	5	5	10
Japan**	8	6,860	17,960	19,002	20,016	22,658	0.1	73	183	192	200	215
Egypt	—	—	323	361	399	475	—	—	11	12	13	14
Kenya	—	—	9.9	—	14	16	—	—	1.1	—	1.4	1.5
Mexico	—	—	1,218	—	1,790	2,978	2	19	29	—	39	59

Source: *Statistical Yearbook, 1971*, pp. 640-42.

* 1954.

** Data for Japan are given for comparison.

their own national radio and TV industries, which, in addition to producing equipment (on licence from more advanced countries), are managing to produce their own national models (Tables 5 and 6). In countries with low average figures (for radio and TV sets per thousand inhabitants), there are areas of very high saturation, a phenomenon that is becoming more noticeable every year.

Estimates made by UNESCO experts suggest that in Third World countries there will soon be a demand for about 500 million cheap radio sets. In Asia (excluding Japan) there were 38 million sets in 1968, in Africa six million, and in Latin America 23 million.

An indication of the growth of information media is also the increased circulation of newspapers and magazines, though the developing countries are way behind the industrially developed states in number of copies per thousand inhabitants. In Pakistan there were six copies of newspapers per thousand inhabitants, in Sri Lanka 44, in Mali 0.6, in Malaysia 75, while in Sweden the figure was 518, in Japan 492, in Britain 463, in the German Democratic Republic 455 and in the FRG 328.

In the twenty years beginning 1950 world paper consumption tripled (Table 7); in Africa it rose tenfold, but all the same Third World countries still lag behind North America and Europe in the per capita consumption of paper (Africa 0.8 kg, Asia 1.3 kg, North America 29.7 kg). The difference can be seen from the following figures (in kg):⁴⁴

	1950	1968		1950	1968
Burma	0.1	0.4	Brazil	1.3	2.3
India	0.3	0.7	Guatemala	0.4	0.6
Iraq	0.2	1.0	Honduras	0.2	0.7
Iran	0.2	—	Costa Rica	0.8	1.9
Pakistan	0.1	0.4	Mexico	1.6	2.5
Turkey	0.5	1.3	Australia	9.5	15.9
Ghana	0.2	1.0	Greece	1.4	3.9
Egypt	1.1	1.3	Italy	3.7	16.4

Kenya	0.4	0.7	Netherlands	10.2	31.8
Libya	0.5	0.8	Canada	13.4	26.8
Nigeria	0.1	0.1	Japan	4.0	16.2
Ethiopia	0.01	0.1			

It is expected that world paper consumption will reach 18,700 thousand tons by 1980 (doubling the 1970 figure), which will also involve increased demand for printing machinery.

In 1968 the world published 487,000 titles of books, 70 per cent more than in 1955, but this great flood was very unevenly spread over the continents. Europe, with 13 per cent of the world's population, published 44 per cent of the titles, Africa, with 10 per cent of the population, published 1.6 per cent, and Asia, with 55.9 per cent of the population, 20.5 per cent of the titles. The number of books published in Third World countries on the whole is rising, but the figures for individual countries differ greatly. Algeria issued 258 titles in 1967, Kenya (1968) 177, Nigeria 1,004, Egypt 1,937, Malawi 14, Liberia (1966) 11, Burma 1,569, India 11,413, Iraq 1,231, Peru 783, Uruguay 341, etc.

Recognising the vital role of publishing in the development of culture, and stressing the significance of books as a most effective mass medium of information, the UNESCO General Conference declared 1972 International Book Year.

At a meeting of publishing experts held in 1966 the representatives of Asian countries set the aim of increasing publishing to 80 pages per person by 1980. This requires an annual increase of 12.5 per cent. On UNESCO's recommendation, the International Bank for Reconstruction and Development has made low-interest loans available for this purpose.

Imperialist circles are untiring in their efforts to bring all mass media in Third World countries under their control, and pay much attention to selling television films, financing the publication of newspapers and books, opening branches of book-selling firms and flooding the market with literature at give-away prices.

Table 7

Consumption of Newsprint in Selected Countries

Country	Total consumption (000 tons)				Consumption per inhabitant (kg)			
	1950-1954*	1960	1967	1968	1950-1954*	1960	1967	1968
Burma	4.3	11.0	8.2	14.9	0.2	0.5	0.3	0.6
India	64.9	99.1	121.1	144.6	0.2	0.2	0.2	0.3
Iran	3.6	6.6	9.4	9.4	0.2	0.3	0.4	0.4
Pakistan	4.9	14.4	34.0	34.0	0.1	0.1	0.3	0.3
Turkey	11.9	20.9	59.3	60.0	0.5	0.8	1.8	1.8
Egypt	17.4	34.6	46.3	20.9	0.8	1.3	1.5	0.7
Libya	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3
Nigeria	1.7	5.3	5.2	5.3	0.1	0.1	0.1	0.1
Guatemala	1.8	3.8	6.2	6.2	0.6	1.0	1.3	1.3
Mexico	60.8	99.6	163.4	146.9	2.2	2.8	3.6	3.1
Canada	345.0	464.8	661.2	499.5	23.8	26.1	32.3	24.0
Japan	279.2	721.6	1,359.7	1,569.0	3.3	7.7	13.4	15.5

Source: UNESCO, *Statistical Yearbook*, 1969, pp. 596-98.

* Annual average.

Study of the development of mass media and their effect upon the social and cultural changes in Third World countries is still only beginning in the USSR,⁴⁵ but it is obvious that, in evaluating events in those countries, one must not ignore the role of the radio, television and the press in moulding national consciousness, in the successful introduction of reforms, and in particular, in the training of national cadres.

Health services. Major transformations have also been made in the field of public health in the developing countries. This was all the more necessary as epidemics, chronic sickness and hunger remained universal calamities even after political independence had been achieved. And apart from its purely humanitarian aspect, the problem became especially pressing in connection with the task of improving their labour force.

Cardinal changes could only be brought about in the situation, of course, by the introduction of complex measures, involving raising of the standard of living, improving conditions of life, the founding of medical institutions and the spreading of knowledge on sanitation, which, for countries newly liberated from colonial dependence, presented special difficulties. Even at the beginning of the sixties, they had a disastrous shortage of medical workers: in Afghanistan, for example, one doctor had to serve 32,000 inhabitants, in Indonesia 41,000, in Nepal 72,000, in Mali 42,000 and in Niger 65,000.⁴⁶

It would be wrong to ignore the advances that have been made since then. Many countries have managed to create national health services and have had considerable success in combating smallpox, cholera, plague, malaria, tuberculosis, leprosy and other grave diseases. The network of medical institutions has been extended and the pay of their staffs increased. Asian and African countries have set up health centres combining a medical, epidemiological and public hygiene service, though the number of inhabitants served by each centre is still very high: between 20,000 and 80,000 in Kenya, 50,000 and 100,000 in Tanzania, and 150,000 and 200,000 in separate localities of Nigeria.⁴⁷

Serious attention is being given to medical care for children, above all to combating infant mortality.⁴⁸ Algeria, Colombia, Costa Rica, Guatemala and Venezuela have made efforts to open recuperative feeding stations—for children suffering from dystrophy. Several countries have nationalised all medical institutions (Mauritania, Mali and Senegal) or most of them (Algeria, Gabon, Libya, Sudan and Zambia), so as to increase their control over public health. The supply of medicaments for the population has been increased. It has become possible, to some extent, to employ modern medicines (especially antibiotics) and also insecticides, fungicides and the new drugs so needed in Asian and African countries. Naridazol, for instance, used against schistosomiasis (considered by specialists in tropical medicine to be the

Table 8

Smallpox Cases in Selected Countries (1959-1966)

Country	1959	1961	1963	1964	1965	1966
Dahomey						
(Benin)	1,708	119	249	718	168	530
Niger	1,159	1,740	445	30	463	1,147
Nigeria	1,599	3,600	1,778	1,430	4,566	4,924
Zaire	2,471	3,624	5,525	2,191	3,783	1,913
Ethiopia	367	761	232	104	58	228
Kenya	572	336	249	273	276	156
Tanzania	1,442	915	867	1,461	2,743	3,027
India	47,963	45,380	83,423	40,265	39,402	32,616
Pakistan						
East	5,048	660	3,995	72	316	3,207
West	3,373	2,408	1,929	935	1,285	2,935
Brazil	3,354	8,546	6,287	3,076	3,269	3,518

Source: WHO statistics.

greatest discovery since antibiotics) may help cure 200 to 300 million patients, and greatly improve their countries' labour resources.⁴⁹

All that, however, is clearly not enough. It is still too early to talk of accessibility of the medical service for all strata of the population, or of being able to use medicines or means of improving the efficiency of sanitary and hygienic measures on the scale needed. And there still remains an acute shortage of hospitals, dispensaries and laboratory equipment.

In spite of the fact that certain advances have been made in combating especially serious diseases, these have by no means been eradicated. India, Pakistan, Bolivia, Brazil, Peru, Ecuador and some African countries are periodically afflicted by outbreaks of plague. There was a pandemic of cholera in Indonesia in 1961. Improved communications and the slackening of vigilance in epidemiological services resulted in this disease penetrating, within a decade, areas that had been free of it for years. WHO reported that, between



Medical check-up in Indian rural centre

May and June 1971, there were 41,417 cases of cholera throughout the world (6,073 fatal);⁵⁰ of these, 11,605 were in India, 9,765 in Ghana, 7,030 in Niger, and 5,217 in Nigeria.

In accordance with the developing countries' campaign against smallpox there has been mass vaccination of their population,⁵¹ but the number of deaths is still great; in 1969, however, morbidity fell by 44 per cent on the previous year.

Malaria is still one of the commonest diseases, especially in Africa. At present around 1,700 million people live in infected areas, and 384 million in districts where anti-malarial measures have not been carried out.



Malarial blood-test. India

Some developing countries suffer from limited reserves of drinking water, which encourages the development of various diseases and complicates their control. The governments of these countries have the complicated but urgent task of creating powerful systems for desalinating seawater.

The populations of some countries are greatly harmed by their belief in ancient customs and rites and by blind following of tradition. The holy river Ganges, for example, in which Hindus take ritual baths, but which receives the sewage water of all the towns located along it, is a source of

the spread of many diseases. There are traditional views that one should hide the fact of having leprosy or tuberculosis; as a result, the disease becomes protracted and medicine is powerless to deal with it.

The WHO Constitution states that health is a state of all-round well-being, and not merely the absence of disease and physical defects. Applied to most of the young states the words sound almost ironical. Analysis of the state of their inhabitants' health reveals that average expectation of life is much lower than in industrially advanced countries (Table 9). The calory value of food (and its adequate biochemical composition) remains an unsolved problem for the basic mass of people (Table 10).

Table 9

Average Expectation of Life in Selected Countries

Country	Years	Of total population	By sexes	
			males	females
Argentina	1960-1965	67	64	70
Brazil	1940-1950	42	39	46
Venezuela	1960	63	61	66
Mexico	1959-1961	59	58	60
India	1951-1960	41	42	41
Japan	1967	72	69	74
Egypt	1960	53	52	54
Mongolian People's Republic	1964-1965	65	64	66
USSR	1968-1969	70	65	74
USA	1966	70	67	74
Britain	1965-1967	72	69	75

Source: TsSU. *Narodnoye khozyaistvo SSSR v 1969 g.* (USSR Central Statistical Board. The USSR Economy in 1969), Moscow, 1970, p. 139.

The fifties and sixties presented national health services with new problems connected with high birth rates and the rapid growth of urban populations. The population explosion has caused many countries to introduce family planning

Table 10

Average Daily Ration (per capita)
in Selected Asian and African Countries

Country	Calories	Consumption of animal protein, g
Afghanistan	1,990	7.8
Egypt	2,960	10.7
India	2,510	20.5
Jordan	2,620*	8.2
Iran	1,950*	11.8
Libya	2,560	15.2
Pakistan	2,230	10.1
Syria	2,480	10.0
Sri Lanka	2,150	8.5
Japan	2,460	29.5

Source: FAO data cited in *Azia i Afrika segodnya* (Asia and Africa Today) No. 8, 1971, p. 54. The FAO minimum for the Middle East and South Asia is, 2,250 to 2,700 calories and 30 to 35 grams of animal protein. The average norms for developed countries are 3,000 to 3,200 calories and 40 to 50 g of animal protein. Although some improvement of rations has been observed in most of the developing countries the problem still remains very important for the improvement of national health.

* These figures require verification.

programmes, and the urbanisation problem has necessitated the organisation of systems of sanitation and public hygiene. These measures call for considerable outlays that have proved beyond their power. The development of industry and agriculture has raised the question of maintenance of ecological balance and protection of man against the phenomena caused by its disruption.

In order to evaluate the state of a nation's health and the problems of reproduction many factors have to be taken into account: economic and hygienic indices, such as intensity of labour, unemployment, medical standards, etc.

One should mention World Health Organisation's efforts to improve medical statistics in developing countries, which should facilitate objective evaluation of the state of health of their populations.

The Soviet Union and other socialist countries are rendering aid of all kinds to young sovereign states, the humanist nature of this aid evoking deep respect among Eastern nations. Lenin constantly stressed the importance of this policy: "We shall exert every effort to foster association and merger with the Mongolians, Persians, Indians, Egyptians. We believe it is our duty and *in our interest* to do this, for otherwise socialism in Europe will *not be secure*. We shall endeavour to render these nations, more backward and oppressed than we are, 'disinterested cultural assistance', to borrow the happy expression of the Polish Social-Democrats."⁵²

These statements by the founder of the Soviet state have been taken as the departure point for the USSR's mutual relations with countries liberated from colonial dependence. "The socialist countries," the Programme of the CPSU says, "are sincere and true friends of peoples fighting for their liberation and of those that have freed themselves from imperialist tyranny, and render them all-round support.... The CPSU regards it as its internationalist duty to assist the peoples who have set out to win and strengthen their national independence, all peoples who are fighting for the complete abolition of the colonial system."⁵³

The advances and achievements of the USSR in building socialism, which have invariably attracted attention and aroused intense interest, and its consistent peace policy, founded on respect for the rights of all nations, however small, have served as the basis for its many years of co-operation with developing countries. That co-operation has never had political strings; its object has been consolidation of the sovereignty and economic independence of the young states of the East.

Soviet aid is mainly extended on the basis of inter-governmental agreements, which have been signed with 55 countries,⁵⁴ and is primarily directed to vital industrial projects and building up the infrastructure of these countries (Table 11).

Aid in the social and cultural field takes the form of measures aimed at promoting the development of education and training of national cadres, broadening the scope of scientific research and improving the public health system.⁵⁵

In recent years, as the Report to the 24th Congress of the CPSU says, "political and economic co-operation with the liberated countries has been further developed. . . . Dozens of industrial and agricultural enterprises have been built in many countries of Asia and Africa with our participation. We have also been making a contribution to the training of personnel for these countries. All this is being done in the mutual interest".⁵⁶

It has become common practice to train workers during the building of industrial and other projects and to provide facilities for technicians and engineers to improve their qualifications. In Bhilai, for example, only up to the time the works was opened in 1959, Soviet specialists trained some 2,200 engineers, technicians and workers, over 700 of them in the Soviet Union itself.⁵⁷ During the construction, fitting out and operation of enterprises built with Soviet aid, some 25,000 people have been trained, either directly on the job, or at the training centres opened in Dekhraduna, Cambay, Bhilai, Ranchi and other places.⁵⁸

During the building of the Aswan dam in Egypt, more than 10,000 people became skilled workers; in Afghanistan the number trained since 1954 has reached nearly 50,000.⁵⁹

The Soviet Union's agreements on co-operation in training cadres with Iran, Iraq, Syria, Algeria, Morocco and other countries are being successfully carried out.

Unlike Western firms, which often refuse to hire local labour and insist on bringing in foreign workers, Soviet organisations try to train local cadres so that they can take over the running of the enterprise once it starts production.⁶⁰ More than 215,000 workers in different trades, technicians and engineers have been trained with Soviet help in Third World countries, including 163,000 on the job.

Table 11

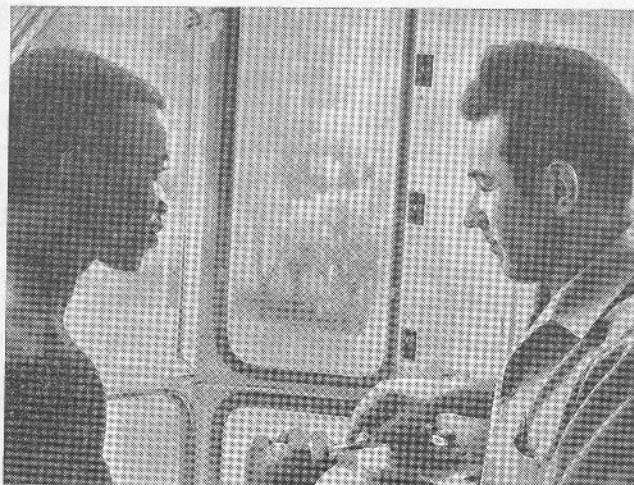
Industrial and Other Projects, Completed, Under Construction, or to Be Constructed with Soviet Technical Co-operation (as of January 1, 1970)

	Agreed	In operation
Total	714	326
Industry	275	113
Electric power	45	13
Oil extraction and refining, gas	14	7
Coal	13	2
Iron and steel	15	7
Non-ferrous metals	15	2
Chemical and petrochemical	12	3
Engineering and metal-working	55	27
Forestry, pulp and paper, and wood-working	3	1
Building materials	10	5
Pharmaceutical	6	4
Light industry	13	7
Food	44	23
Agriculture	151	50
Transport and communications	74	49
Geological surveys	55	17
Education, culture, health protection and sports	144	88
Housing and communal services	8	5

Source: *Izvestia Vsesoyuznogo geograficheskogo obshchestva* (Proceedings of the All-Union Geographic Society), Vol. 103, Issue 1, 1971, p. 5.

Other socialist countries are also making a sizeable contribution. The German Democratic Republic, for example, is training technicians and workers in the fields of mechanical engineering, electrical engineering and agriculture, while Polish specialists undertake the training of economists, planners and builders.⁶¹

Since the mid-fifties the Soviet Union has been actively aiding developing countries to set up technological institutes and specialised educational establishments and training centres. The Bombay and Haragpur technological institutes and



Gaston Ngolo, the Congo's (Brazzaville) first crane-driver, seen here with his teacher

other higher educational establishments were founded with its aid in India, the Kabul polytechnical institute and technological colleges in Kabul and Mazar-i-Sharif in Afghanistan and more than 70 educational establishments in African countries (Table 12). With assistance from the Soviet Union and other European socialist countries Afghanistan, Burma, Cambodia, Algeria, Guinea, Ethiopia, Mali and several other countries have opened more than 20 beautifully equipped institutes of higher learning and faculties, in which some 15,000 people are now studying.

Representatives of socialist countries also help organise curricula and draw up syllabuses and study plans.⁶² Soviet professors and teachers⁶³ give courses of lectures in various disciplines, many of which are being introduced for the first time. Soviet textbooks and teaching aids are being more and more widely used.⁶⁴

The training of national cadres for Asian, African, and Latin American countries is being carried out on quite a

broad scale in the universities, institutes and specialised secondary schools of the USSR, and the number of people coming here to receive education is constantly growing (Table 13). The vast majority (more than 80 per cent) study in natural science and technological faculties, medical institutes and agricultural academies, i.e., are acquiring the professions their countries need most.⁶⁵ In addition, in the Soviet Union and Czechoslovakia there are universities the student bodies of which also include Third World students: the Patrice Lumumba Peoples' Friendship University (in Moscow) and the 17th November University (in Prague). Admission is not subject to restrictions of any kind as to racial or national origin, or religious or political convictions, etc. The cost of maintenance and instruction is borne by the host country.

In the second half of the fifties scientific co-operation between the USSR and Third World countries began to broaden. Visits by Soviet scientists and the holding of joint conferences and symposiums became normal occurrences. A major role in the development of these contacts has been played by the USSR Academy of Sciences,⁶⁶ the Union Republican academies and also by the branch ministries. The Directives of the 24th Congress on the Ninth Five-Year Plan (1971-1975) made special mention of the need to "continue to develop firm economic, scientific and technological ties with the countries of Asia, Africa and Latin America on the basis of mutual benefit and in the interest of strengthening these countries' economic independence".

Around 50 long-term agreements envisage the establishment of scientific contacts between Soviet institutions and scientific and educational establishments in developing countries. Inter-governmental agreements have been signed in recent years with Algeria, Morocco, Iran and Syria, providing for a broad range of joint research into the use of atomic energy for peaceful purposes, in the fields of medicine, geology, geophysics and power engineering, and on the development of oil and gas fields.



Students of the Patrice Lumumba
Peoples' Friendship University

The help of the Soviet Union in setting up laboratories with the latest equipment and passing on research methods is aiding developing countries to overcome their backwardness in various branches of knowledge. It is hardly to be expected, however, that they will be able to exert any marked influence on the progress of world science in the near future. Their share of the total spent on scientific research and development outside the socialist world, it has been noted,⁶⁷ is only 2 per cent, while their percentage of the total number of scientific workers is even less than that. None the less one must recognise that India, Turkey, Iran, Egypt, Mexico, Brazil and Argentina have made considerable advances in certain areas of science. In a number of cases these successes are the result of the extension of new forms of collaboration in the way of joint research and work in mathematics (for example, the work by Yuri Linnik, Member of the USSR Academy of Sciences, and Dr. C. R. Rao of India), chemistry, geology and geophysics. With the expan-

Table 12
Educational Establishments Already Built, Being
Built, or to Be Built in Asia and Africa with USSR Aid
(as of January 1, 1972)

	Total		Including					
			higher educational establishments		secondary specialised establish- ments, schools and colleges		training centres	
	planned	func- tioning	planned	func- tioning	planned	func- tioning	planned	func- tioning
Total	134	85	20	15	21	6	93	64
Afghanistan	3	1	1	1	2	—	—	—
India	13	4	5	4	6	—	2	—
Indonesia	1	1	1	1	—	—	—	—
Iran	6	3	—	—	—	—	6	3
Iraq	9	6	—	—	—	—	9	6
Yemen Arab Republic	3	3	—	—	3	3	—	—
Yemen People's Democratic Republic	1	—	—	—	—	—	1	—
Cambodia	1	1	1	1	—	—	—	—
Pakistan	1	—	—	—	—	—	1	—
Syria	4	1	—	—	—	—	4	1
Algeria	19	8	2	1	2	1	15	6
Cameroun	2	—	—	—	—	—	2	—
Egypt	44	44	1	1	—	—	43	43
Ghana	3	1	—	—	—	—	3	1
Guinea	2	1	2	1	—	—	—	—
Zambia	3	—	1	—	2	—	—	—
Kenya	2	—	—	—	2	—	—	—
Mali	6	5	2	2	1	1	3	2
Morocco	1	1	1	1	—	—	—	—
People's Repu- blic of Congo	1	1	—	—	—	—	1	1
Nigeria	1	—	—	—	—	—	1	—
Somalia	1	1	—	—	1	1	—	—
Republic of Chad	1	—	—	—	1	—	—	—
Tunisia	1	1	1	1	—	—	—	—
Uganda	1	1	—	—	—	—	1	1
Ethiopia	4	1	2	1	1	—	1	—

Table 13

Number of Third World Students in Soviet Higher Educational Establishments (1960/61 and 1970/71)

	1960/61	1962/63	1964/65	1966/67	1968/69	1970/71
Asia	1,407	3,165	4,185	4,933	5,234	5,662
Africa	933	2,314	3,996	5,013	5,587	6,337
Latin America	188	574	913	1,197	1,348	1,469
Total	2,528	6,053	9,094	11,143	12,169	13,468

Source: N. Sofinsky, "The Soviet Union Assists Developing Countries in Personnel Training", *Social Sciences*, No. 2(4), 1971, p. 166.

sion of agriculture in India, Burma, Sri Lanka, Egypt, Mexico and the Philippines, the establishment of closer scientific contacts in this field, too, is to be expected.

Marked progress has also been made in the sphere of nuclear research, which has been encouraged by visits to Soviet scientific centres, the building of nuclear reactors with Soviet assistance (there were altogether 41 reactors in operation in Third World countries by 1969), and joint projects. The Soviet Union has made 100 scholarships and stipends available for students and specialists on nuclear problems from India, Iran and other countries.⁶⁸

An increase in the amount of fundamental research in physics, chemistry and other sciences is being fostered by the training of scientific workers in the post-graduate study departments of the USSR Academy of Sciences and the universities. Scientific cadres are also being trained in the many national educational institutions set up with Soviet aid.

Science can only be developed in Third World countries if the results of research are simultaneously applied to industry; that is why Soviet involvement in developing new technologies based on current scientific advances and adapt-

ed to the conditions in the countries concerned is so important. Soviet specialists are aiding Egypt in work on power engineering, the use of solar energy, irrigation and land improvement, and are helping India to build iron and steel works employing the latest equipment. "Soviet aid is playing a decisive role in the development of our young aircraft industry," Prof. Banat, Dean of the Aviation Faculty of the Bombay Technological Institute, said in an interview.⁶⁹

Soviet aid is particularly active in the field of health protection. Soviet doctors, microbiologists and experts in social hygiene have been sent to countries in Asia, Africa and Latin America to help control epidemics, establish health services and train the necessary cadres. A group of Soviet doctors was sent for this purpose to the Yemen as early as 1928; and in a letter to M. I. Kalinin, thanking the Soviet Union for this aid, the King of the Yemen said he regarded it as "an example of the sincere and serious attitude of the Union of Soviet Republics". Immediately after Algeria achieved her independence 100 Soviet medical workers spent 15 months in the areas worst affected by epidemics and carried out an immense programme of treatment and prophylaxis. Specialists from the USSR have taken an active part in the anti-tuberculosis campaign in Somalia; and their work in relieving the victims of disasters in Mali, Peru and other countries is well known.

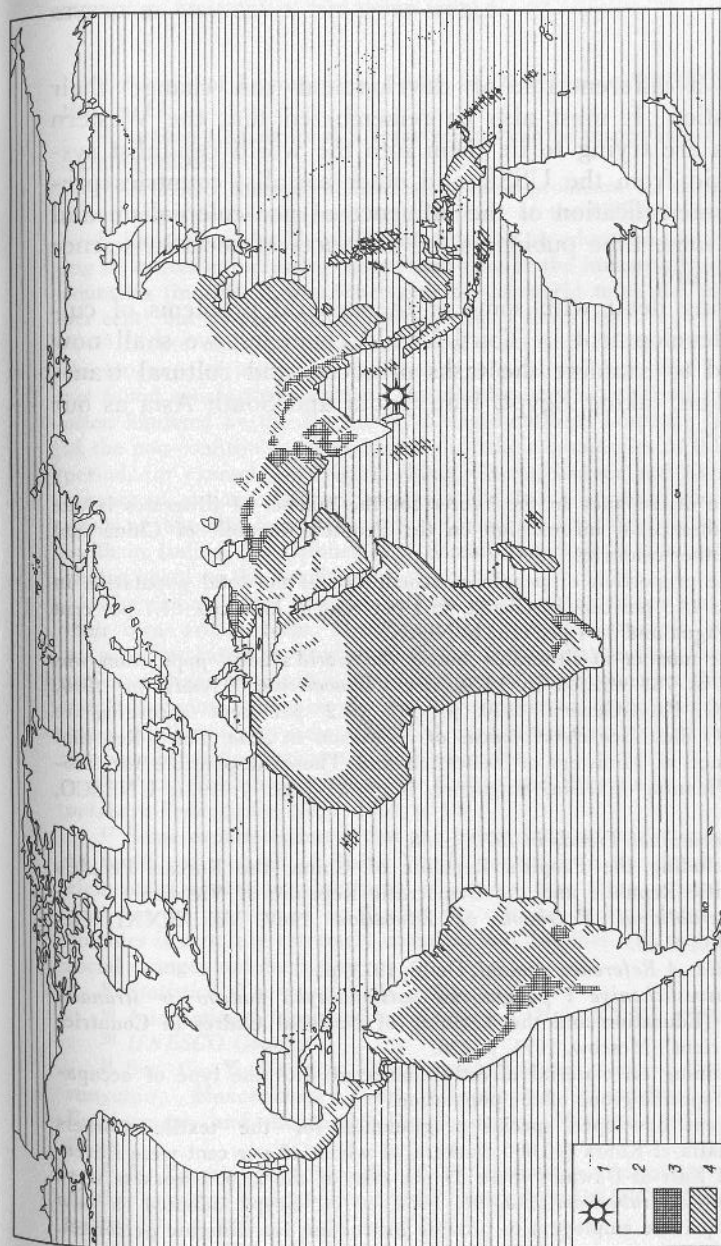
In a number of countries (Burma, Cambodia, Iran, Nepal, Ethiopia, Guinea and Somalia) there are medical institutions entirely fitted out with Soviet equipment. Much has been done in India, Egypt and other countries to set up medical and pharmaceutical industries based on the latest word in technique and employing the latest technology. Much aid is being given in the form of various medicaments. Every year the USSR supplies free, either through WHO or directly, a vast number of doses of smallpox, cholera and polio vaccines,⁷⁰ and is playing a particularly important role in the WHO programme to eradicate smallpox.

Due recognition has been given by Iran and Ethiopia to the Alliance of Red Cross and Red Crescent Societies of the USSR, whose personnel not only provide treatment but also help raise the qualifications of local medical workers, giving consultations and convening joint conferences with Iranian and Ethiopian doctors. The press in these countries systematically publishes reports of the helpful activity of Soviet doctors.

Soviet consultants take part through World Health Organisation⁷¹ in various projects for developing health and sanitary services in Third World countries. In the past few years regional seminars have been held in the Soviet Union under WHO programmes for Third World doctors on plague, cholera, leprosy and other diseases.

Soviet aid exerts a considerable ideological influence on the development of the young generation in Third World countries.⁷² The effectiveness of this aid will depend on how far the advances of Soviet science and scholarship are employed, including Oriental studies, which encourage the development of national cultures in African and Asian countries through extensive research and the publication of written memorials. This work brings out the humanism of Soviet science and scholarship, which always respect the culture of other countries. We recall Lenin's words: "Marxism has won its historic significance as the ideology of the revolutionary proletariat because, far from rejecting the most valuable achievements of the bourgeois epoch, it has, on the contrary, assimilated and refashioned everything of value in the more than two thousand years of the development of human thought and culture."⁷³ Soviet people take the latest knowledge to developing countries and so promote the growth of their economies and the shaping of a progressive world outlook in their peoples.

The Soviet Union naturally pays special attention to countries with a socialist orientation since its aid in these areas can be of real support for the new social and political system. But it should not be forgotten that countries that have



WORLDWIDE ANTI-MALARIA CAMPAIGN

1—areas where cases have been registered recently; 2—areas which never had malaria foci or where it has been completely eliminated as a result of the antimalaria campaign; 3—areas having entered the consolidation phase; 4—areas of endemic foci or where malarial outbreaks are possible

chosen a different line of development can change their orientation. It must also be remembered that the Western powers are trying to tie them into the world capitalist system. Aid from the USSR and other socialist countries prevents intensification of the influence of neo-colonialism and at the same time publicises the advances of socialist science and culture.

Having dealt with some of the general problems of cultural development in Third World countries, we shall now proceed to examine the tasks of social and cultural transformation, taking Egypt, Iran, India and South Asia as our examples.

¹ The discrepancy in the figures for the number of illiterates is due to the absence of information on the People's Republic of China and several other countries.

² The proportion of people of school age in the total population in 1964 was 48.3 per cent in Ghana, 49.4 per cent in Morocco, 61.7 per cent in Nicaragua and 54.4 per cent in Niger.

³ The number of illiterates among the world's adult population was as high as 788 million in 1970 (see *Educational Trends in 1970*, UNESCO, Paris-Geneva, 1970, p. 58), 34.2 per cent according to UNESCO data (see *Development of Education in Asia*, Third Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia, Singapore, May 31-June 7, 1971, UNESCO, 1971).

⁴ *Educational Trends in 1970*, p. 58.

⁵ Excluding the People's Republic of China, the Korean People's Democratic Republic and the Democratic Republic of Vietnam.

⁶ *International Yearbook of Education 1969*, Vol. XXXI, Geneva, 1970, p. 43.

⁷ *India. A Reference Annual*, Delhi, 1973, p. 5.

⁸ *Prosveshcheniye i podgotovka natsionalnykh kadrov v stranakh Vostoka* (Education and the Training of National Cadres in Countries of the Orient), Moscow, 1971, p. 226.

⁹ Training on material directly connected with the type of occupation of a specific group of the population.

¹⁰ Egypt developed special programmes for the textile workers of Mekhalla-el-Kubra (40,000 workers, of whom 40 per cent were illiterate) and Kafr-al-Dawar (where 35 per cent of the 25,000 workers were illiterate). *Za rubezhom*, No. 31, 1971, p. 14. Egypt adopted a law obliging private employers to provide instruction for illiterate personnel.

¹¹ *Functional Literacy as a Factor in Development*, UNESCO, Paris, 1970, p. 17.

¹² In time all functional literacy centres can be turned into vocational training schools.

¹³ UNESCO takes great interest in these problems. Its documents of recent years discuss the positive experience of the USSR in detail.

¹⁴ Expenditure by Third World countries on education and the training of cadres is increasing faster than that of the industrially developed countries (in 1950 it was 5 per cent of the world total and in 1964 10 per cent), but on a per capita basis it is many times less.

¹⁵ In the multi-lingual countries of Asia and Africa the choice of the language of instruction becomes a political problem, that has not as yet found satisfactory solution. The development of a school network is often hindered by the absence of a single national language (the result of the non-conformity of territorial and ethnic boundaries in the colonial period, for example, in Nigeria, Mali, Ghana, Guinea and Kenya). The absence of national written languages also has a negative effect. In the north of Somalia lessons used to be conducted in English and in the south in Italian. (In October 1971 Somalia adopted its first national alphabet based on the Arabic script.)

The colonial past has also left its mark on languages that do have their own written form. The Hausa language, for example, was given an alphabet based on English phonetics in Nigeria, and on French phonetics in Niger. As a result the inhabitants of these countries, though they speak the same language, do not have access to each other's publications. At the present time UNESCO experts are involved in developing a system of writing common to both countries.

¹⁶ V. A. Kondratyev, "National Cadres and Progress in Africa", *Sovetskaya Pedagogika*, No. 7, 1969, p. 125.

¹⁷ Some experts estimate that the industrially advanced countries are 80 to 90 years ahead of Third World countries in the development of elementary education. One must, of course, take these estimates critically, but the problem of eradicating the cultural backwardness of former colonies is certainly extremely complex, and one that will require radical social changes and much time.

¹⁸ *Statistical Yearbook*, 1969, p. 89.

¹⁹ *International Yearbook of Education*, Vol. XXXI, 1969, p. 180.

²⁰ *UNESCO Courier*.

²¹ See G. Y. Skarov, *Razvivayushchiyesya strany: obrazovaniye, zanyatost, ekonomichesky rost* (Developing Countries: Education, Employment and Economic Development), Moscow, 1971, pp. 125-26.

²² In Zambia, for example, 50,000 elementary school-leavers could neither continue their studies nor find work (see *UNESCO Courier*, February 1971, p. 15).

²³ In a number of countries, especially in Africa, this problem is often exacerbated by the fact that many secondary school-leavers do not want to return to their native villages, though the need for qualified personnel is much more acute in rural areas than in the towns. Their reluctance is linked with the conception, inherited from the colonial past, that working on the land is degrading. These young people often remain in the towns as semi-unemployed. The government of Upper Volta, the Chad Republic, and the Malagasy Republic see the solution in the setting up of secondary school in villages, with special curricula taking into account the specific features of the local economy.

²⁴ *International Yearbook of Education*, Vol. XXVIII, 1966, p. 438; Vol. XXXI, 1969, p. 202. These figures do not give an exact picture of the state of affairs since some national education services include music and dance schools among professional schools along with technological, industrial, commercial and agricultural schools.

²⁵ For more details see page 192.

²⁶ In this connection the Canadian Wayne McEwing has written: "One thing everyone agrees upon is that present educational systems everywhere will have to become much more flexible and open-ended and that each individual is going to have to learn to admit when his education has stopped working for him and doesn't apply to the world as he finds it... The very heart of education should be change and regeneration both in what man knows and how he thinks; too often in the past it has been an instrument of stultification and dogma... Each one of us realises that, in spite of all the educational statistics and diplomas in the world, there can be no such thing as an 'educated man', only a man 'becoming educated'." (*UNESCO Courier*, August-September 1971, p. 25). The future of education undoubtedly lies in continuing education, which ensures high qualification.

²⁷ Compare these figures for certain developed countries in 1967:

Austria	734
Canada	2,201
Italy	715
Norway	588
Japan	1,398

(See *International Yearbook of Education*, Vol. XXX, 1969, Geneva, 1970, pp. 213-19).

²⁸ One form of incentive is provided by a system of state scholarships often made available for students in the professions most needed; in some places there is even a differentiation in the scale of scholarships between faculties. In a number of countries (Egypt, Tunisia, Tanzania, etc.) scholarships are paid to students who undertake to work on graduating, for two to five years, on projects to which they are assigned by governmental bodies.

²⁹ See V. A. Kondratyev, "The Industrialisation of Developing Countries and Formation of National Cadres", *Narody Azii i Afriki*, No. 4, 1971, p. 7.

³⁰ Among the important reasons for this is the so-called demographic trap, i.e., the disparity between growth of population and of production, and in consequence the impossibility of employing the surplus labour force resulting from its natural increase. Another factor is the tendency to reduce the proportion of living labour, brought about by technological advances and low rates of economic growth.

³¹ The weaknesses in planning are not only accounted for by the complexity of the problem but also by the existence of a private, capitalist sector.

³² Many countries, in drawing up development plans for the seventies, took into consideration the proposals of national education commissions which called for its decolonialisation.

³³ On the development of education in Latin American countries see *Uysshaya shkola Latinskoi Ameriki* (Higher Education in Latin America), Moscow, 1972, the first book on the problem published in the USSR.

³⁴ The University of East Africa is at present divided into three national universities, but an inter-university commission has been set up to deal with common problems.

³⁵ See *Izvestia*, May 5, 1971.

³⁶ In our view Soviet Orientalists and Africanists do not pay sufficient attention to cultural and artistic problems in Asian and African countries; yet knowledge of them is very important for understanding the social psychology of their peoples.

³⁷ See the work by members of the Institute of the History of Natural Sciences and Technology *Protsess prevrashchenia nauki v neposredstvennuyu proizvoditelnyuyu silu* (The Process of the Transformation of Science into a Productive Force), Moscow, 1971.

³⁸ On the effect of various aspects of the scientific and technological revolution on developing countries in Asia and Africa see A. Y. Shpirt, *Nauchno-tehnicheskaya revoliutsia i razvivayushchiyesya strany Azii i Afriki* (The Scientific and Technological Revolution and the Developing Countries of Asia and Africa), Moscow, 1970. Very interesting material was adduced by the conference on the scientific and technological revolution and developing countries, organised jointly by the Institute of Oriental Studies and the Institute of World Economy and International Relations of the Academy of Sciences of the USSR (see: *Mirovaya ekonomika i mezhdunarodnye otnosheniya*, Nos. 7 and 8, 1971). Some figures illustrating the international "trade" in knowledge can be found in A. I. Levkovsky's book *Trety mir v sovremennom mire* (The Third World in the Contemporary World), Moscow, 1970, p. 90. One of the first in the Soviet Union to raise the problem of the inter-

relation of science and culture and the contradictions between them was D. Mikhailov in his article "Scientific and Technological Progress and the National Cultures of Oriental Peoples" in *Azia i Afrika segodnya*, Nos. 10-12, 1971.

³⁹ Unfortunately, the statistics on developing countries do not allow one to make a detailed analysis of the level of scientific development, and the figures for the number of scientific workers are not comparable with those taken as basic material.

⁴⁰ *Conference on the Application of Science and Technology to the Development of Asia*, Pt. II, New Delhi, 1968, p. 29.

⁴¹ This phenomenon has been discussed time and again. See, for example, R. Avakov and V. Gavriluk, *Pokhishcheniye umov* (The Brain Drain), Moscow, 1970.

⁴² Soviet scientists and specialists have taken part in carrying out a number of projects in India, Egypt, Mali and other countries.

⁴³ There have been instances of barbarous use of television for political ends. In 1971 the execution of participants in an anti-government demonstration was televised in Morocco, and similar cases have occurred in African countries.

⁴⁴ *UNESCO Statistical Yearbook, 1969*, pp. 601-04. Consumption of printing paper (other than newsprint) and writing paper.

⁴⁵ See Y. Yermoshkin, I. Suchkov, *Respublika India. Pechat, radio, televideniye* (The Republic of India. Press, Radio, Television), Moscow, 1971; N. K. Kotsarev, *Obyedinyonnaya Arabskaya Respublika. Pechat, radio, televideniye* (The United Arab Republic. Press, Radio, Television), Moscow, 1969; A. P. Kiselev, *Neokolonializm i pechat* (Neocolonialism and the Press), Moscow, 1971.

⁴⁶ In the USSR there is one doctor per 400 people, in Mongolia one per 580 and in Britain one per 670.

⁴⁷ O. P. Shchepin, "Questions of Organising Medical Aid in African Countries", *Sovetskoye zdravookhraneniye*, No. 9, 1970, p. 79.

⁴⁸ A high percentage of infant mortality is largely linked with the absence of normal assistance for women in childbirth: they resort to the services of women quack-doctors, etc.

⁴⁹ According to incomplete figures Egypt alone suffers an annual loss estimated at nearly 80 million Egyptian pounds as a result of loss of fitness for work through schistosomiasis.

⁵⁰ This excludes data for Chad, where there has been an epidemic of cholera.

⁵¹ In December 1969 more than 100 million people were inoculated in the countries of West and Central Africa alone.

⁵² V. I. Lenin, *Collected Works*, Vol. 23, p. 67.

⁵³ *The Road to Communism*, Moscow, 1961, pp. 497-98.

⁵⁴ S. A. Skachkov, "The Soviet Union's Economic and Technical Co-

operation with Developing Countries" in *Izvestia Vsesoyuznogo geographicheskogo obshchestva*, Vol. 103, Issue 1, 1971, p. 4.

⁵⁵ Soviet aid in the fields of education, science and health protection is less than, say, in the iron and steel industry or power engineering (about 4-5 per cent against 26 and 19 per cent according to approximate figures), but it cannot be evaluated solely in monetary terms.

⁵⁶ *24th Congress of the CPSU*, Moscow, 1971, p. 25.

⁵⁷ Y. K. Semyonov, *Sotrudnichestvo vo imya progressa* (Co-operation in the Name of Progress), Moscow, 1968, p. 77.

⁵⁸ *Diplomatia i kadry* (Diplomacy and Cadres), Moscow, 1968, p. 116.

⁵⁹ N. Sofinsky, "Fruitful Co-operation", *Kommunist*, No. 15, 1970, p. 108.

⁶⁰ A. G. Smirnov, *Nauchno-tekhnicheskaya intelligentsia Indii* (The Scientific and Technical Intelligentsia of India), Moscow, 1967, p. 140.

⁶¹ L. Z. Zevin, *Noviye tendentsii v ekonomicheskoy sotrudnichestve sotsialisticheskikh i razvivayushchikhsya stran* (New Trends in the Economic Co-operation of Socialist and Developing Countries), Moscow, 1970, pp. 53-55.

⁶² Work is proceeding on the translation and publication of textbooks for all levels of education. This form of co-operation has as yet not been given its due place in the work of Soviet foreign trade organisations. It may, however, become an important landmark in the extension of friendly relations between the USSR and Third World countries.

⁶³ There are agreements on exchange of lecturers.

⁶⁴ Educationalists have a high opinion of Soviet textbooks and other literature (as the author became convinced during visits to many schools and higher educational establishments in India and Egypt). Growing interest in the Soviet Union has led to courses in Russian being instituted in a number of Third World countries; in some schools and higher educational establishments it has been introduced as a compulsory subject. It is usually taught by Soviet teachers. An annual summer seminar is held in the USSR for foreign teachers of Russian.

⁶⁵ Under the auspices of UN aid to developing countries courses are held in the USSR to train cadres for fields in which these countries are deficient (mechanical engineering, the production of mineral fertilisers, the iron and steel industry, etc.).

⁶⁶ For more details see: S. G. Korneyev, *Nauchniye svyazi Akademii nauk SSSR so stranami Azii i Afriki* (The USSR Academy of Sciences' Links with Asian and African Countries), Moscow, 1969.

⁶⁷ G. Skorov, "The Scientific and Technological Revolution and Developing Countries. Potentialities and Realities", *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 6, 1971, p. 126.

⁶⁸ See: *International Affairs*, No. 2, 1971.

⁶⁹ *Izvestia*, June 6, 1971.

⁷⁰ In connection with the events in East Pakistan and the increased numbers of refugees in India at the end of 1970 and in 1971 the USSR donated medicines and equipment.

⁷¹ Unfortunately, Soviet aid to developing countries in the fields of health protection and social hygiene has still not been adequately treated. A first short summary is to be found in D. Chertkov, R. Andreyan and Y. Mozhayev, *SSSR i razvivayushchiyesya strany* (The USSR and Developing Countries), Moscow, 1966. There is also some information in Y. A. Dobrovolsky's *Zdorovye naselenia mira v XX v.* (World Health in the Twentieth Century), Moscow, 1968.

⁷² The role of young people in the social and economic progress of Third World countries will be decisive in the near future. For that reason their education in democratic traditions can have a major influence on the further development of these countries.

⁷³ V. I. Lenin, *Collected Works*, Vol. 31, p. 317.

THE ARAB REPUBLIC OF EGYPT

British colonialists and their class allies, the Egyptian landowners and capitalists, made no efforts to develop public education. A great part of budget expenditure went on such things as upkeep of the army, police and courts.¹ Even at the end of the forties not more than 5 per cent of the budget was spent on schools and universities. The 1947 census indicated that 70 per cent of those over the age of ten were completely illiterate (66 per cent of man and 88 per cent of women), the number having grown since 1907 from 7,300,000 to 10,400,000.

Although the authorities were forced by public opinion to add a clause to the 1923 Constitution on the introduction of universal elementary education, it remained on paper. On the eve of the 1952 revolution not more than 40 per cent of school-age children were registered in schools. Between 1,300,000 and 1,400,000 children were attending elementary school (very irregularly); but most children, especially in rural areas, were studying in kuttabs, where boys and girls had to memorise passages of the Koran and received only the rudiments of literacy. Secondary schools had around 160,000 pupils, mainly children of landowners, capitalists, civil servants, members of the free professions and merchants. Working-class children had no opportunities of entry.

There were hardly any secondary schools in the villages, and rural areas as a whole were four or five times worse pro-

vided with educational establishments and teachers than the big towns.²

The revolution of 1952 led by Nasser was a turning point in the modern history of Egypt and, in ushering in an era of independent state development, it marked the beginning of a radical reconstruction of the educational system, dictated by motives of a socio-political and socio-economic order.

First the new government strove to extend the programme of progressive transformations to all Egyptians, ensuring their social mobilisation and enlisting their conscious support, which was essential if the complex tasks facing the country were to be tackled, and an essential condition for which was the eradication of illiteracy, so that revolutionary ideas and slogans could become accessible and comprehensible to the ordinary people of town and country.

Mass media (radio, television, etc.) had no small role, of course, in making possible direct contact with a multi-million audience, but their influence is not nearly so deep as that of the printed word.

Second, the republican government understood the objective need to raise the productivity of labour in all branches of the economy, not only through the introduction of new tools and equipment but also by improving the quality of the labour force, that is, by spreading knowledge and skills of all kinds among the widest strata of the population. The key to such a long-term strategy had to be universal education with simultaneous development of all its forms and stages.

Third, Egypt's young leaders strove to achieve the spiritual and cultural decolonisation of the masses, their dream being to mould people of a new type, freed from the shackles of the recent past, from servility and suppression, and the inferiority complex instilled into them by the colonial authorities and the local reactionary élite. A vital prerequisite for emancipation of the personality had to be education of the peasants and workers. Subsequently, when the govern-

ment of G. A. Nasser officially declared a socialist orientation for the country this humanist ideal began to assume definite features: the educational system was mobilised to educate citizens of the new Egypt, ready to struggle for social progress against external and internal reaction, for the building of a society without exploitation.³

These ideas were not formulated immediately, and putting them into practice gave rise to serious difficulties; but the very fact of gradual recognition by the leadership of the need for a new approach to the education of the masses opened up great prospects: it is an integral part of the programme of non-capitalist transformations.

Elementary and Secondary Schools

Reconstruction of the educational system called above all for large expenditure; and there was a great increase in this after 1961. Thus, whereas on the eve of the revolution, annual expenditure on education and scientific research had been between 22 million and 32 million Egyptian pounds, in 1959-60 it was 51 million, and by 1968/69 it had reached 139 million Egyptian pounds.⁴

A major achievement in the social and cultural development of Egypt was the introduction of free education at all levels. Mobilising its material, financial, and labour resources, the government took active steps to carry out articles 38 and 39 of the 1964 constitutional declaration, which stated: "All Egyptians have the right to education. The state is obliged to build schools of various kinds and universities, and also cultural and educational establishments, and to extend them. Special attention is to be given to the physical, spiritual and moral development of young people. . . . Instruction in state schools and higher educational establishments is to be free."

This revolutionary step ensured gradual implementation of the principle of equal opportunity, helped to solve the problems of the accessibility of education to the working-class

strata of the population and has played an important role in the formation of a new intelligentsia capable of taking on the responsibility of achieving the ideals of the 1952 revolution.

The reform of school education was begun immediately after the revolution. Its structure and the curricula of all types of educational establishments, including both state and private institutions, were unified. The system of elementary and secondary education now embraced pre-school institutions (of which there are still few), six-year primary schools, preparatory (incomplete secondary) schools, giving a three-year general and vocational-technical training, and secondary educational establishments giving a similar education of the same duration. In 1957 Egypt and other Arab states signed agreements on the setting up of a uniform system of education with common curricula at each stage and examinations for teachers to determine their qualifications.

In accordance with these plans the building of schools developed in Egypt, especially in rural areas, and there was a significant increase in the scale of teacher training, with a marked trend to increase the proportion of women teachers, and already in the early stages the principle of equal educational opportunities for boys and girls began to be implemented.

The uniform curriculum of the primary school includes the following subjects: Arabic, Islam, arithmetic, elementary geometry, natural sciences, geography, history, elementary hygiene and physical education; and since 1963 it included the history of the Arab revolution. It also envisages lessons in crafts, domestic science, dressmaking, etc.⁵

The introduction of new subjects giving practical knowledge, expansion of the network of educational establishments, and the influx of tens of thousands of teachers stimulated the development of elementary education (Table 14). If there were 1,610,000 pupils in elementary schools in 1951/52, of whom only 556,000 were girls, in 1969/70 there

Table 14

Elementary Education in 1953/54-1970/71

Year	Schools	Classes	Number of Pupils			Teachers		
			Boys	Girls	Total	Men	Women	
1953/54	6,751	35,223	866,631	526,410	1,392,741	33,667	12,202	
1954/55	7,452	40,416	984,445	595,674	1,580,089	33,030	13,431	
1955/56	8,366	45,440	1,175,239	685,703	1,860,942	32,930	15,243	
1956/57	7,701	47,932	1,232,758	743,116	1,975,874	35,816	15,815	
1957/58	7,422	51,217	1,302,743	783,961	2,086,704	36,772	17,994	
1958/59	7,312	55,598	1,425,679	860,388	2,286,067	39,963	20,979	
1959/60	7,213	58,794	1,524,514	927,863	2,452,377	39,789	23,639	
1960/61	7,158	61,162	1,612,903	997,266	2,610,169	41,775	25,913	
1961/62	7,273	63,893	1,700,112	1,054,454	2,754,566	43,232	27,837	
1963/64	7,569	72,196	1,918,239	1,211,453	3,129,692	—	—	
1964/65	7,698	76,289	2,009,824	1,285,008	3,294,832	—	—	
1965/66	7,751	79,578	2,077,882	1,339,871	3,417,753	—	—	
1966/67	7,842	80,152	2,090,562	1,323,418	3,413,980	—	—	
1967/68	7,771	81,685	2,129,884	1,341,450	3,471,334	approx. 50,000	approx. 41,000	
1969/70	8,122	85,463	2,241,758	1,376,992	3,618,750	—	—	
1970/71	8,415	88,058	2,318,198	1,422,353	3,740,551	—	—	

Source: *Comparative Statistics of Education from 1953/54 to 1961/62*, Cairo, 1961, p. 25; *Statistical Abstract of the United Arab Republic, 1951/52-1970/71*, Cairo, 1972, p. 130.

ford, so there is no final data for the realisation of this aim.

The incomplete secondary schools, both general and technical, have the same tasks: all-round training of students for conscious work and involvement in the building of the new society. Their development was seriously hampered, however, by the shortage of teachers of whom there were not more than 25,000 in 1966/67.⁸

Vocational training at the level of incomplete secondary education used to be given in industrial, agricultural, commercial, and girls' technical schools (training classes were instituted at some factories and mills). The unsatisfactory state of the teaching in most of these schools led in recent years to the majority being converted to general schools.

Colleges training teachers for elementary schools function within the framework of the secondary education system. Students who have completed nine classes of school education have to take a five-year course of training, while students with full secondary education do a two-year course. The curriculum of the colleges includes Arabic language and literature, English, mathematics, natural sciences, geography, history, pedagogics, psychology, drawing, music, gardening, domestic science, hygiene and physical education. The total number of students fluctuates between 35,000 and 50,000.⁹

In the sixties there was a rapid development of secondary schools, particularly during the period of the first five-year plan (1960-1965). When one remembers that there were only 134,000 secondary pupils in pre-revolutionary Egypt, one can see how great have been the advances in this field (Table 16). It will be even more noticeable, when the country will gain many qualified workers for various branches of the economy.

Secondary school pupils specialise in both the humanities and natural science subjects, but there has been a marked tendency to prefer the latter. In 1967/68, for example, 23,800 of the total number of pupils passing the final exa-

minations for the complete course chose humanities, 51,300 natural science, about 10,000 technical subjects, nearly 6,000 agriculture, and 11,500 commerce.¹⁰ This was the fruit of deliberate state policy taking into consideration needs of the country's economy and the development prospects of higher education.

Teaching in Egypt's secondary schools follows the curricula adopted in nearly all Arab countries, with a weekly load of 32 to 34 academic hours. One or two languages are obligatory (the first, as a rule, being English). The volume of theoretical knowledge imbibed in these schools is greater, in the opinion of experts, than in US secondary schools, but Egyptian pupils are poorly equipped to apply this knowledge in practice, a fact which is an indication of the slow reorganisation of so-called classical education.

The drop-out of pupils at examination time remains a sore problem. It is due in part to the inadequate qualifications of the teachers, many of whom do not have a university degree, though by rights only persons with a Bachelor's degree are allowed to work in secondary educational establishments. The textbooks, too, do not always answer to modern needs.

Vocational and technical schools—industrial, agricultural, commercial, and domestic science—have an important place in the system of secondary education. Apart from their special subjects, their pupils study Arabic and foreign languages and general education subjects. These schools, depending on their type, have either workshops, or an experimental farm with up to 75 feddans of land. Pupils also have practical training in factories, state institutions, etc.

In recent years existing enterprises and those under construction have opened training courses (lasting from nine months to two years) in which secondary school-leavers wishing to become skilled workers, craftsmen, charge hands and foremen often enrol.

One must emphasise the sharp increase in the proportion of girls among the pupils in vocational educational establishments. The number of girls in commercial schools, which

Higher Education and Science

The 1952 revolution and the social and economic advances made in the country at the time had a considerable impact on the development of higher education. There was a rapid growth in the number of institutions of higher learning and in the number of students. By 1968 there were 170,000 students as against 41,000 in 1952. At the end of the sixties there were five students to every 10,000 inhabitants in Egypt, while Libya had 1.2, Tunisia 1.0, Morocco 0.78, and Algeria 0.5 per 10,000.¹² The increase went hand in hand with reorganisation of higher education to meet the real needs of the economy.

The foundation of the Egyptian system of higher education is provided by the universities (catering for about 80 per cent of the students): the four state universities (Cairo, Alexandria, Ain-Shams and Assiut), Al-Azhar, the oldest Moslem university in the East, and, lastly, the American University in Cairo. In 1972/73 universities in Mansur and Thant were opened.¹³

Cairo University was first built by private means in 1908, and later reorganised as the Cairo State University. It has 14 faculties, viz., Humanities, Economics and Political Science, Law, Natural and Exact Sciences, Pedagogy (in Dar El-Ulum), Engineering, Agriculture, Veterinary Sciences, Medicine, Stomatology, Pharmacy, Nursing (training highly qualified nursing sisters and midwives), Commerce and Statistics. The university has 65,000 students (20 per cent of whom are women) and 2,379 lecturers. The length of courses, depending on the discipline, varies from four to six and a half years. Cairo University also has its own research institutes, laboratories and experimental stations; and in 1955 it opened a branch in Khartoum (Sudan).

The University of Alexandria, which was founded in 1942 on the basis of a subsidiary of Cairo University, plays an important role in training cadres for Lower Egypt, where

there is quite a big concentration of industry (shipbuilding, engineering, metalworking, oil refining and light industry). In the sixties it underwent great expansion, the number of students rising from 20,859 in 1960/61 to 37,986 in 1969-70,¹⁴ women constituting 22 per cent of the total number of students. The biggest of its 12 faculties are Engineering, Agriculture and Medicine, the first two having both extra-mural and evening departments. The three faculties in Thant used to be run on the lines of an affiliated body. University of Alexandria carries on scientific work in various fields; it was there that Egypt's first cycle of research in the field of sanitation and hygiene was begun (in particular, work is being done, in collaboration with WHO, on developing measures against schistosomiasis).

The University of Ain-Shams in Cairo had 42,462 students in 1969/70. Two of its faculties, Engineering and Pedagogy, both of which have post-graduate courses, are the largest in Egypt.

The founding of Assiut University in 1957 was prompted by the need to supply cadres for Upper Egypt. By 1970 it had 13,238 students in eight faculties.

The former centre of Eastern higher theological education, Al-Azhar (founded in 970 A. D.) has preserved its importance to this day.¹⁵ In 1961 the National Assembly decided that it should be radically reorganised. To the traditional faculties of Moslem Law, Religion and Arabic were added new faculties of Agriculture, Medicine, Engineering, and Administration. In 1962/63 the Islamic Faculty was opened for the first time to women.

The university has its own elementary and secondary schools, and it also includes a Higher Academic Council, an Academy of Islamic Studies, institutes and various religious centres in Cairo and the provinces. It has a wonderful library and produces its own publications. In 1966/67 it was attended by 18,264 students and 66,314 schoolchildren, who distributed as follows among the faculties and institutions:

Moslem Law	2,014
Arabic Studies	2,214
Religion	1,838
Islamic Faculty for Women	886
Industry	1,180
Agriculture	870
Medicine	1,328
Translation	161
Management and Administration	1,508
National Orientation	3,122
The Higher School of Islamic Research	3,143
Elementary schools	31,395
Preparatory schools	21,438
Secondary schools	13,481

It would be wrong to underestimate the role of this university, with its concentration of Islamic specialists and experts on the classical Arabic language and Medieval literature, in the public life of Egypt and other countries of the Moslem world.

In view of the great influence of the Moslem clergy, and of the oppositional role played by a certain section of it, the government has established control over Al-Azhar's activities.

The American University of Cairo was founded in 1919 as a department of Washington University. Its faculties of Exact and Social Sciences, English and Arabic teach about a thousand people. The university is supported by grants from the US Government and the Ford Foundation, and private endowments.

Qualified specialists are also trained by institutes and colleges outside the university system (Table 17), in particular by the Women's Teacher Training College, and colleges training teachers of art, music, physical education and domestic science.

There is also the Cairo Higher School of Languages, which trains teachers and translators of Russian, English, German, French, Spanish, Italian and Chinese, and a number of

Table 17

Higher Educational Establishments Outside the University System (1969)

Institute or college	Number	Students		total
		men	women	
Industrial	9	8,840	678	9,518
Agricultural	4	6,145	1,156	7,301
Commercial	8	4,781	2,088	6,869
Art	3	2,991	1,768	4,759
Teacher Training	9	2,931	3,052	5,983
Total	33	25,688	8,742	34,430

Source: *Higher Education and Culture in the UAR*.

higher military schools, including military, air force, and military engineer colleges.

All of Egypt's higher educational establishments are subordinate to the Ministry of Higher Education. The Supreme University Council deals with questions of educational planning, and supervises co-ordination of the work and financial discipline of higher educational establishments.

Higher educational establishments work on unified curricula, with between 14 and 20 hours of lectures a week, not counting laboratory work. Arabic is the official language of instruction, although, because scientific and technological terminology is not highly developed in Arabic, certain courses are given in English. This naturally leads to certain difficulties since, as a rule, secondary school-leavers are not sufficiently proficient in foreign languages to be able to take in lectures in English or French or understand textbooks and scientific literature in those languages. In addition most of the lecturers who have been educated in Western countries are not able to teach in Arabic.

On finishing college the student is awarded the degree of Bachelor. To achieve a Master's degree the graduate must, within a two-year period, undertake research work and take

the examinations of his college's Council. Original scientific work brings the next higher degree, that of Doctor.

The needs of the economy in the context of its planned development and the programming of labour resources forced the Nasser government to concentrate on expanding natural science and technological education, which led to a re-examination of the organisation of university education, and to considerably more hours being devoted to vocational training. There has also been a change in the proportion of students in the different faculties, as the following figures show:

	Humanities	Natural Sciences and Technology
1960/61	58,275	34,017
1965/66	71,629	65,251
1968/69	68,490	71,452

The number of graduates in the various fields of engineering is growing year by year, and their standard of training improving.

The intake of Egyptian higher educational establishments in 1970 was 28,800,¹⁶ much higher than in preceding years. That in itself is undoubtedly encouraging, though the principle of selecting students and entrance qualifications—by competition of school-leaving certificates—can hardly be called ideal. Entrance conditions are established each year by the Supreme University Council. Candidates with the highest marks are enrolled in the medical faculties, while those with the lowest marks enter the humanities faculties (each candidate names the three faculties in which he would like to study on his application). The demands made upon candidates are not very rigorous, and often depend on the numbers wishing to enter a given faculty.

The expansion of higher education has exacerbated the problem of finding academic staff, which is further complicated by the considerable drift of teachers into government-

al service and industry, and by the comparative slowness of post-graduate departments in training new cadres. Quite a number of qualified teachers also leave Egypt to teach in other Arab countries.

The weaknesses in the organisation of the higher educational system are also linked with poor and obsolescent equipment in laboratories, the irregular supply and shortage of textbooks and scientific literature (mainly of foreign periodicals), and the lack of sufficient attention to independent work by students, which tells on the standard of their final-year theses and projects.

The post-revolutionary period had been marked by a considerable increase in the scale of scientific research. In 1956 a Higher Council for Sciences was set up to advise the President and to be responsible for promoting and co-ordinating the work of scientific establishments, gathering information on world scientific advances and giving scientific workers the opportunity to employ the latest research methods. The Council was empowered to make proposals to the Cabinet on the development and financing of science. Later its functions were transferred to the Ministry of Scientific Research.

A vital place in Egypt's system of scientific institutions is occupied by the National Research Centre, which has five departments: physics, chemistry, technology, geology and hydrogeology, and a staff of around 1,400 scientists and 700 assistants. Its well-equipped laboratories form cells of advanced research that could form the nuclei of independent institutions in various branches of science.

The Egyptian Desert Institute founded in 1925, only doing serious work since the fifties, comes under the Centre. Its job is to study the problems of irrigating desert areas and the prospects of developing agriculture and stock-raising in them, and to evaluate their mineral resources. Some 96 per cent of Egypt is desert or semi-desert.

Since 1955 Egypt has had its own atomic energy establishment, equipped with the aid of the USSR and other socialist



A laboratory at the National Research Centre

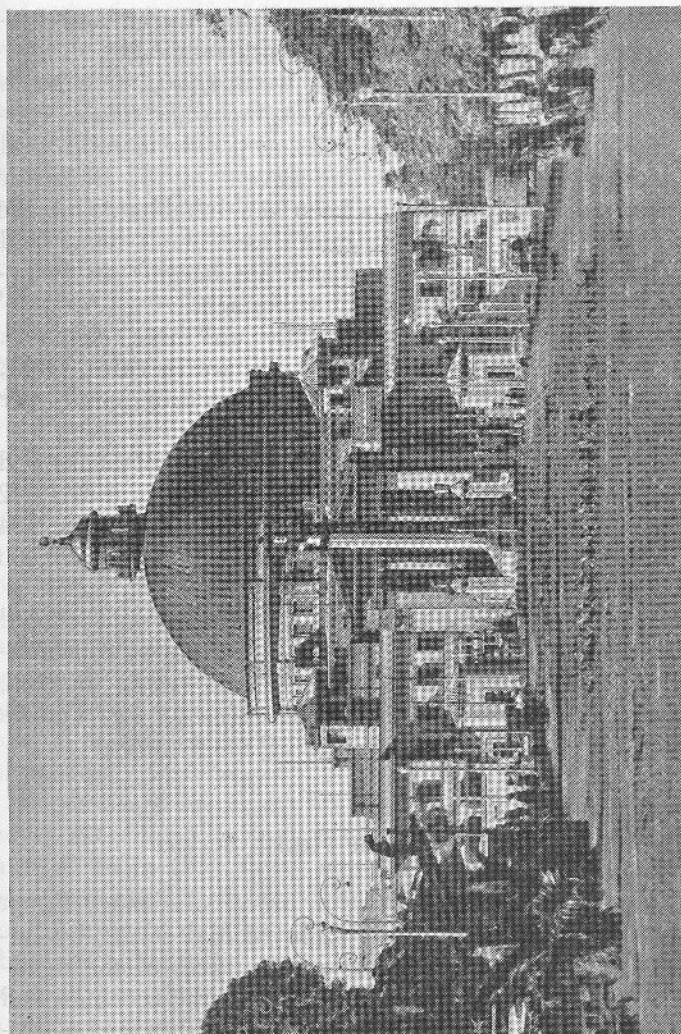
countries. It has been investigating problems of the peaceful use of atomic energy.

The Helwan Observatory's Institute of Astronomy and Meteorology is responsible for the provision of astronomical, meteorological and geophysical services, and has facilities for post-graduate students. It also has its own research stations at El Fayum for studying terrestrial magnetism, and an observatory at Katamia.

Also important are Egypt's scientific societies, which unite scientists working in various institutions.

Mass Media¹⁷

Egypt has more powerful radio stations than other Arab countries, broadcasting 155 hours of home and foreign programmes a day. Cairo Radio broadcasts to Egypt in six lan-



Cairo University

guages (Arabic, English, French, German, Greek and Italian) and has foreign services in twenty languages.

In 1968, it was estimated, there were 4,300,000 wireless sets in Egypt.¹⁸ Broadcasting plays an important role in educating the population and in mobilising people to fulfil vital economic and political tasks. The advent of the transistor radio has made it possible to keep the inhabitants of the remotest corners of the country informed about home and international affairs.¹⁹ The transistor has become an everyday thing even among the nomadic tribesmen.

Egyptian television broadcasts daily on three channels. Many of the country's 600,000 TV sets are in cafés, clubs, offices and other frequented places, so that programmes are available to at least five or six million people.

According to UNESCO statistics 1,849 titles of books and pamphlets were published in Egypt in 1965, and 1,872 in 1970, 1,702 of them in Arabic. At the same time 384 school textbooks were published in a total of 26,600,000 copies.

Government measures to improve education and extend literacy have had an effect in increasing per capita consumption of paper from 0.8 kg in 1950-1954 to 1.3 kg in 1960, and 1.5 kg in 1967 (Libya 0.1 kg, Morocco 0.1 kg, Tunisia 0.5 kg, Spain 4.6 kg, and France 11.3 kg).

Development of the Health Service

The state of the health service in pre-revolutionary Egypt was actually determined by its semi-colonial status, by imperialist exploitation and by the consequences of the dominance of big landowners and capitalists in the economy and governmental apparatus. The extremely low standard of living of the mass of people, universal illiteracy, and insanitary conditions at home and at work inevitably led to the spread of disease and epidemics, and to a very high general death rate and infant mortality.

In the first half of the twentieth century, moreover, there was a marked tendency for the standard of living to decline, reflected mainly in a worsening of the diet of the majority of peasants and town dwellers. Annual per capita consumption of cereals and beans fell from 290 kg in 1910-1914 to 210 kg in 1950-1952, while per capita consumption of milk and meat fell by about 10 per cent in the 40 or 50 years before the revolution. The general index of per capita agricultural production was 20 per cent lower than in 1910-1914. The diet of millions of working people remained quite unsatisfactory as regards quantity and especially as regards quality. The "typical Egyptian's" ration consisted mainly of vegetable products and contained very little protein, fat and vitamins. Consumption of animal protein was only a quarter of the nutritional norm.

All this weakened people's vitality and the resistance of their organism. The overwhelming majority of the rural population and a considerable part of the urban population suffered from bilharziasis, ankylostomosis, trachoma, malaria and other diseases. Four out of five peasants called up for military service were completely unfit, and only one peasant in twenty to twenty-five was healthy in the full sense of the word. There were periodic epidemics of cholera, smallpox, plague and dysentery that would carry off tens of thousands of people.

Expenditure on health in the colonial period, moreover, never exceeded 1 to 3 per cent of total government expenditure. Even in 1951 there were only 5,200 qualified doctors, of whom more than 4,000 lived in towns, mainly in Cairo and Alexandria. While the latter two had one doctor per thousand inhabitants each, there was one doctor per 15,000 to 20,000 in the villages of Lower and Upper Egypt. The number of hospital beds in rural areas was one-sixth or one-seventh of that in the towns. The standard of medical attention remained extremely unsatisfactory, and resulted in a great many patients not receiving necessary treatment. The death rate was very high, rising in some years to 25 to 30

deaths per thousand inhabitants; and of every thousand children born between 200 and 250 died within a year. The average life expectation of both men and women was 30 to 32 years; in some rural provinces it fell to 25 or 27 years.

The social and economic transformations implemented after the 1952 revolution also brought radical changes in the public health system.²⁰ Despite the great difficulties linked with combating reaction at home and abroad and despite the need to mobilise resources to repulse Israeli aggression, there was a slow but steady rise in the standard of living.

The completion of the Aswan High Dam and the irrigation of 1,500,000 feddans of land (all of which was done with the participation and under the direction of Soviet specialists, employing the techniques and experience accumulated during irrigation work in the Central Asian and Transcaucasian republics of the Soviet Union) opened new opportunities for extending arable acreage and improving the yields and efficiency of Egyptian agriculture. The social and economic transformations in the economy as a whole and in agriculture showed a beneficial effect. The use of improved seed, artificial fertilisers and new agrotechnical methods led in 1970 to record harvests of cotton, rice, maize, onions and wheat—an important step toward eliminating dependence on imported foodstuffs.

While the social and economic advances expressed in the country's transfer to the path of progressive development under President Nasser created the premises for a rise in living standards, work in the field of sanitation and hygiene, and the propagation of medical knowledge and habits (with special emphasis on rural areas) made it possible to raise the efficiency of the medical service.

Egypt's republican government has aimed at a complex solution of health problems, gradually going over to planning of the basic units of the medical service, of the training of the specialists needed, and finally, of the manufacture of medicines and equipment for hospitals, medical centres and new medical institutions.²¹

Since many diseases in the past were directly or indirectly linked with the absence of clean drinking water in rural areas, and even in some towns, the government undertook the construction of wells and water pipes, which, by the beginning of the seventies, gave the peasantry the possibility of using clean drinking water.

In the medical service itself great stress was laid on measures to train doctors and nurses. By the end of the sixties the number of qualified doctors had risen by 150 per cent. The expansion of higher medical education provided the newly-built hospitals and medical centres with doctors and other personnel, and enabled Egypt to help other Arab countries that were in serious need of medical staff. Whereas there were around 9,300 students in medical faculties in 1959/60, by 1967/68 there were nearly 25,000. Between 1,100 and 1,300 medical degrees were being granted every year.²² That, of course, indicates a sizeable drop-out among medical students. The main point, however, is that the scale of medical education has made it possible to set a realistic target date already now for completion of the programme to provide medical service (of contemporary standards) for the whole population.

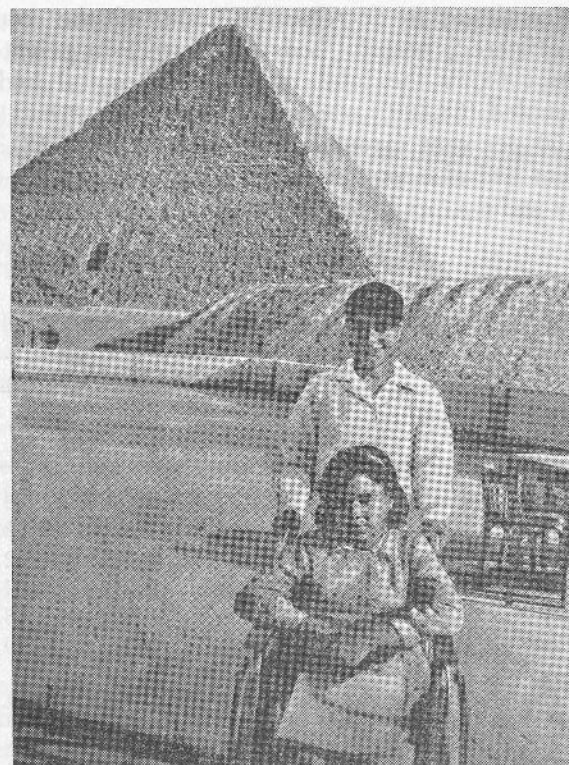
At the same time there were improvements in the standard of training of personnel with higher and secondary qualifications. For the first time subjects such as demography, epidemiology, medical statistics and ecology were included in curricula. Future doctors were acquainted with the advances of world medicine, with new instruments, medicines, etc. Lecturers were given responsibility for emphasising the importance of a complex approach to organisation of the medical service, and of a unified system of sanitation, hygiene and prophylactic measures.

Since the effectiveness of public health depends largely on its development in rural areas, the government introduced a system whereby medical graduates had to work in the countryside for at least two years after completing a year's probation in hospitals.²³



Medical students doing practical work
in the countryside

In order to democratise the health service and extend it to all areas of the country, considerable resources have been appropriated for the building of hospitals and medical centres in towns and especially in rural areas. Total expenditure on public health rose from between seven and ten million Egyptian pounds by the end of the forties and the beginning of the fifties to between 55 and 60 million pounds at the end of the sixties, that is, was increased at least five- to sevenfold. Per capita state expenditure on health nearly quadrupled.²⁴ This opened the way to launching a long-term plan based on the setting up of special health centres in towns and large inhabited localities. According to the plans of the Ministry of Health²⁵ there is to be such an autono-



An anti-tuberculosis clinic in Giza (Cairo)

mous centre in each province with a hospital having at least 400 beds, and each district is to have a health centre with hospital facilities. Villages are being provided with "health posts" dealing mainly with out-patients.

In accordance with Chapter 3 of the 1964 Constitution, medical attention in all state hospitals and out-patient treatment centres is free. In private hospitals patients pay fees which, as a rule, are too high for workers, peasants and other low-paid citizens; but the proportion of private hospitals is

low and continues to decrease. In 1952 of the country's 35,700 (registered) hospital beds 6,000 were in private hospitals. By 1968/69 the total number of hospital beds had almost doubled (68,800), while the private sector had grown by only 50 per cent (around 9,000 beds) (Table 18).²⁶ The government had also strengthened its control over fee-charging clinics and doctors in private practice.

Table 18

Beddage Capacity in Hospitals (1960/61-1969/70)

Year	Type of hospital			
	Ministry of health	Other state-run	Private	Total
1960/61	41,351	7,884	7,180	56,415
1962/63	41,973	8,587	7,671	58,231
1964/65	45,228	8,408	8,522	62,158
1966/67	49,665	7,951	9,712	67,328
1968/69	49,986	9,815	8,992	68,793
1969/70	51,917	9,822	9,193	70,932

Source: *Statistical Abstract of the United Arab Republic, 1951/52-1969/70*, p. 102.

The network of medical institutions existing in the country includes general hospitals attached to the medical faculties, specialised clinics (psychiatric, eye, oncological clinics, clinics for treating cardiovascular and blood diseases; tuberculosis dispensaries, X-ray and stomatological centres).

The following figures show the increase in the number of medical institutions in towns and local centres:²⁷

	1952	1960	1967
Central and public hospitals	90	125	164
Beds	6,400	8,568	12,453
Blood transfusion centres	6	21	99
Dental units	80	111	483
X-ray units	50	243	326

Major advances have taken place in the countryside. After the revolution, a health system was created there, in essence for the first time, intended not only to provide treatment for the fellahs but also to undertake sanitary and prophylactic work so as completely to eradicate social and occupational diseases and make medical care available to all working people. The following official statistics show very convincingly the progress made in this field:²⁸

	1952	1960	1967
Rural health units	222	737	1,707
Doctors	222	566	1,760
Nursing staff	800	1,214	3,495
Health assistants	342	796	2,962

More detailed information on the structure of the rural network of medical institutions (Table 19) reflects the efforts made by the authorities to spread so-called combined centres, which, in addition to purely medical institutions, include also specialised departments in the sphere of social services.

The authorities are paying particular attention to setting up a national pharmaceutical industry. On the eve of the revolution only a little over 1,000 workers and specialists were employed in this area; in 1968 there were more than 14,000. By the end of the sixties Egypt was producing about 83 per cent of the medicines she needed. A special board in the apparatus of the Ministry of Health maintains control over the quality of food products and water supplies and is also responsible for increasing the production of vaccines, sera, medicines, etc. Egypt is now completely self-sufficient in cholera and smallpox vaccines; in 1968-1969 3,000,000 and 26,000,000 doses respectively were manufactured. The Soviet Union helped Egypt greatly in this, assisting with the building of a large antibiotics factory and similar enterprises.

The general description of changes in the health field can usefully be supplemented by an account of measures under-

Health Services in Rural Areas

Table 19

Year	Rural Health Centres		Combined units*	
	total number	number of beds	total number	number of beds
1960/61	260	3,632	234	3,276
1964/65	262	3,708	298	2,176
1966/67	262	3,663	310	4,346
1967/68	261	3,662	313	4,397
1968/69	257	3,708	318	4,467

Table 19 (cont.)

Year	Social centres		Health centres	Other organisations
	total number	number of beds		
1960/61	109	328	—	158
1964/65	109	—	646	95
1966/67	96	—	981	31
1967/68	93	—	1,052	18
1968/69	56	—	1,112	8

Source: *Statistical Abstract of the United Arab Republic, 1951/52-1968/69*, p. 106

* These include adult schools and model farms (dairy farms, poultry farms, co-operatives, etc.).

taken to combat epidemics, endemic and other diseases. The republic has had considerable success in eradicating small-pox, outbreaks of which had often occurred in the country.²⁹ Strict frontier epidemiological control and regular vaccination of the population have led to the practical elimination of this terrible disease in a comparatively short time.

Cholera has always been a serious threat to Egyptians. In 1947, for example, some 33,000 cases were officially registered, of which nearly 20,500 were fatal. For four months the disease raged almost unchecked through many provinces, and it was only with the help of a number of countries,

including the USSR, which sent vital supplies of vaccine, and the co-operation of specialists sent to Egypt through the United Nations, that the epidemic was stamped out. Mass vaccination, epidemiological control, the provision of wholesome drinking water to millions of fellahs and townsmen, extension of the sewerage system, and the cleaning of streets, roads and reservoirs are helping successfully to prevent further outbreaks.

Leprosy is found in almost all East Mediterranean countries.³⁰ Fear of hospitals for lepers, and ingrained prejudices force lepers to conceal their affliction at the very time when it could perfectly well be cured. The use of new, highly active medicines and the explanatory work done on sanitation are conducive to early diagnosis, bringing increasingly effective results. By the early seventies there were about 30,000 lepers in Egypt, some 2,000 of whom were under treatment in 74 specialised hospitals.

WHO statistics indicate that a high proportion of



A source of latent danger of schistosomiasis

children in the East Mediterranean have symptoms of tuberculosis, due in no small degree to an unsatisfactory diet, and particularly to inadequate consumption of dairy products. In the sixties the Egyptian Ministry of Health established annual inspection of four and a half to five million schoolchildren. Children with weakened constitutions are given extra food and the necessary prophylactic measures are taken. Anti-tuberculosis centres have been opened in Cairo, Alexandria and the other main towns. More than 130 specialised dispensaries and hospitals are functioning, with between 9,000 and 10,000 beds. More than 300 fluorographic units, including dozens of mobile ones, examine several million patients every year, thus helping to detect the disease in its early stages.

Until comparatively recently a very high percentage of people suffered from malaria. The water of irrigation and drainage ditches, rice paddies and swamps provided breeding grounds for the larvae of the malarial mosquito. In several areas nearly all the fellahs suffered terribly from this disease. In an effort to combat it some 200 stations with equipment for spraying insecticides were set up; as a result of planned and co-ordinated work on disinfecting wide areas the number of registered malaria cases was reduced to 2.5 or 3 per cent. The health authorities are now developing new, effective ways of fighting mosquito larvae.

Eye diseases, in particular trachoma, were common in pre-revolutionary Egypt. Nearly all village children suffered from it. Although these diseases have a certain link with climatic conditions (sandstorms, etc.) there are social reasons for their being so widespread. The general use of antibiotics, the propagation of knowledge about sanitation and hygiene, and such preventive measures as regular examination of schoolchildren, have helped reduce the numbers affected. There are 150 eye hospitals with more than 3,000 beds. Work is being carried out to develop a vaccine against trachoma.

The health authorities have made serious efforts to detect

and treat skin and venereal diseases, especially their domestic forms. Doctors are trying to instil hygienic habits into the peasantry, pointing out the harmfulness of prejudices that can encourage disease. Many fellahs, for example, ignore the wells that have been provided for them and continue to drink water from the Nile and from canals, supposing that this increases their fertility.

For Egypt the fight against such dangerous diseases as bilharziasis (schistosomiasis) and ankylostomosis, which become chronic and are hard to treat, is extremely important. Most peasants in permanently irrigated areas used to suffer from them. The parasite that causes bilharziasis lays its eggs in the human intestines or bladder. The eggs are then passed out into water in the excrement and hatch into larvae. The latter find an intermediate host (particular species of fresh-water snail) and develop into worms that penetrate the skin of man and enter the blood-vessels. Bathing or washing clothes in irrigation canals and ditches or drinking water from them can lead to infection by schistosomes.

The canals of a number of areas are now being treated with blue vitriol, but that is a very expensive operation. Egyptian medical researchers and specialists from other countries are working on developing new effective disinfectants and medicaments. At the same time an active campaign is being waged in the countryside to spread knowledge of sanitation, with the aim of limiting further spread of these diseases. This all gives grounds for hoping that they will be stamped out in the near future. The fight is all the more important because the spread of bilharziasis and ankylostomosis causes definite damage to the economy. The fact is that fellahs suffering from them lose about 25 to 30 per cent of their fitness for work, which is the same as a loss of agricultural production worth 80 to 100 million Egyptian pounds. Thus, even a substantial decrease in the percentage of sufferers would ultimately raise the productivity of peasant labour considerably, and so give the country additional agricultural produce.

Alcoholism is not a problem in Egypt, but the smoking of narcotics, especially hashish, is. Despite a very strict ban and the prosecution of offenders, it is not proving possible entirely to stamp out the use of drugs, which are mainly of contraband origin.

The advances made in health protection are reflected to a certain extent in the changes in the death rate and the average expectation of life. According to official statistics, the crude death rate, which before fluctuated between 26 and 29 per thousand fell to 14-14.5 by the end of the sixties. Actually this decrease was, evidently, more significant, since the system of registering births and deaths has only begun to work properly in recent years. Infant mortality has also declined (Table 20). Much still remains to be done, of course, in this field, but expectation of life has increased substantially. By the end of the sixties it had risen to 54, and was at least 50 per cent higher than it was in the pre-revolutionary period.³⁴

In evaluating the advances in health protection made by Egypt one must bear in mind the specific difficulties it has had to face. First, it must be remembered that the mobilisation of material and labour resources to repulse Israeli aggression, and the drastic economic effect of the temporary occupation of part of the country since 1967, limited the possibilities of financing broad programmes to develop the health service and restricted growth of living standards, especially nutrition.

Second, Egypt has had to cope with the need to increase all social expenditure drastically in connection with what has come to be called the "population explosion", which means in fact the growth of the annual rates of natural increase of the population. Before the war this usually fluctuated between 1.2 and 1.3 per cent, but by the sixties it had risen to between 2.5 and 2.8 per cent. As a result the population of Egypt has been growing rapidly in the post-revolutionary period as will be seen from the following figures (in millions):

1952	21.4	1968	31.6
1956	23.5	1969	32.5
1960	25.8	1970	33.3
1966	30.1	1971	34.0

Table 20

Birth and Death Rates and Infant Mortality
in Egypt (1917-1969)

Year	Birth rate (per 1,000)	Death rate (per 1,000)	Infant mortality (per 1,000 newborn)
1917	40.1	29.4	251.0
1920	42.2	28.0	138.0
1930	45.1	24.9	151.0
1940	41.6	26.5	162.0
1950	44.4	19.1	130.0
1960	43.1	16.9	110.0
1963	42.8	15.4	118.6
1965	41.4	14.0	—
1967	39.2	14.2	—
1968	38.1	16.1	—
1969	37.1	14.5	—

Source: *Statistical Abstract of the United Arab Republic, 1951/52-1968/69*, p. 19; *Strany i narody Vostochna (Countries and Peoples of the East)*, Issue IX, Moscow, 1961, p. 56.

In the long run, of course, this means extended reproduction of labour resources, which should contribute to development of the economy. But at any particular moment, and especially in Egyptian conditions, in which nearly all the population is concentrated in 3.5 per cent of its area, such a rapid increase gives rise to great difficulties in every field, and necessitates increased expenditure on the social infrastructure. In his speech on the draft National Charter, Gamal Abdel Nasser stated that "this increase (of the population) constitutes the most dangerous obstacle that faces the Egyptian people in their drive toward raising the standard of production in their country in an effective and efficient way".³²

While making efforts to accelerate the development of

industry and agriculture, the authorities have begun at the same time to take certain measures to introduce a family planning policy. By 1968 there were about 2,600 consultation centres where women could get the necessary advice and receive information of the methods and possibilities of using contraceptives. By the early seventies at least 300,000 to 500,000 people had visited these centres. In contrast to other Moslem countries religious leaders in Egypt made no protest, no public protest at any rate, against the birth control programme. But age-old traditions and prejudices, especially in a peasant environment, and the illiteracy of most of the population, presented serious obstacles to fulfilment of this programme. As a result, the plan to reduce the population growth rate to 2.1 per cent by 1970 was not entirely fulfilled. By the end of the sixties, however, the birth rate had fallen noticeably from 43 or 44 per thousand to 37 or 38 (Table 20). So the annual rate of population increase, which reached 2.6 per cent in 1960, and was as high as 2.8 per cent in 1961, had fallen, according to the available official estimates, to 2.5 per cent in 1967 and 2.26 per cent in 1969. There are many reasons for this: the increase in the age of marriage (largely due to the absolute increase in the number of students), the extension of propaganda campaigns, and finally the substantial increase in the number of rural inhabitants migrating to the towns, have all contributed.

If the trend persists in the future, then, other things being equal (i.e., with continuation of present high rates of economic growth), the government will be able to provide a faster growth in standards of living, thus creating the conditions for further improvement of the social services and for a rise in the efficiency of the health service.

In this connection, we must examine a third group of problems mainly connected with the task of supplying the country's rapidly growing population with food. We have already remarked on the definite increase in the per capita consumption of cereals, vegetables and fruit, which must be seen as resulting from the implementation of radical socio-economic

transformations both in the economy as a whole and in agriculture. But it would be wrong to ignore the difficulties and contradictions complicating solution of the food problem. In particular it must be noted that per capita consumption of certain products has not only not increased, but has actually fallen. Consumption of legumes, for example, has fallen from 20 kg in 1934-1938 to 11 kg in 1965-1966, while consumption of fish remained practically unchanged between 1948 and 1966. In the same way per capita consumption of animal protein showed no increase between 1934 and 1967.³³

These figures alone indicate that Egypt has to increase her output of high-quality produce in order to at least double per capita consumption.

The density of Egypt's population per hectare of agricultural land is seven or eight times higher than that of Morocco or Algeria and 50 per cent higher than that of the Federal Republic of Germany.³⁴ This presents the people and authorities with the difficult and urgent job of simultaneously increasing the area of arable land, substantially increasing the yield of all crops and raising the productivity of animal husbandry.

* * *

The foregoing material irrefutably indicates the solid progress made by the Arab Republic of Egypt in developing its system of social maintenance under President Nasser. The progress is remarkable in itself, but it is all the more so when we compare the situation in Egypt with that in other Asian and African countries. In this connection we must mention certain specific difficulties that its leaders have had to reckon with in the past and which can be seen as long-term operative factors. Above all we must stress the not entirely favourable natural and geographic conditions, which have limited the possibilities of achieving extensive economic growth, especially in agriculture. Egypt has no vacant land that can be put under the plough without large, capital-

intensive preparatory work; the area of arable land can only be increased by building major hydrotechnical installations, involving vast expenditure and the mobilisation of extra material, labour and financial resources. It can be said that the development of agriculture in Egypt is more costly than in many other Third World countries.

In contrast to some of these countries, which have at their disposal reserves of mineral wealth from which they derive vast incomes, Egypt has practically no source of accumulation of that kind. One might mention the Suez Canal, but the per capita income from it was comparatively small, and ceased entirely after the Israeli aggression of 1967. In 1975, the Suez Canal, cleared with the help of other countries, the Soviet Union included, again became navigable.

Thus the contradictions between the need for accumulation, vitally important for accelerated economic growth, and the internal possibilities of mobilising it were felt, and continue to be felt more sharply in Egypt than in other Asian and African countries.

The need for accelerated development of the Egyptian economy, moreover, has long been of prime importance, not least because of the high density of the population, and its rapid rate of increase, the effect of the "law of increasing demand" in a situation of mass spread of modern communication media, and the operation of the demonstration effect, have made steady increase of per capita norms of production and consumption an important condition for further development. A complicating factor, too, are the substantial resources needed for defence and repulsing aggression, which we have already mentioned.

This leads to the conclusion that the general conditions for economic development in Egypt were clearly less favourable than in the oil-producing countries, or in those countries that have major sources of income from the exploitation of mineral wealth. How then had Egypt been able, in a comparatively short time, to make such remarkable progress in education, health protection and culture despite

these not very favourable conditions? There were two obvious reasons. The first was that the country had undergone major socio-economic and socio-political transformations that laid the basis for progress in all areas. The second was that Egypt received aid from the socialist countries, and first and foremost from the USSR, of a material, moral, political and "social" character (in the form of experience in implementing social and cultural reforms).

Measures to nationalise the basic modern means of production in the towns and the introduction of an agrarian reform in the countryside enabled the Egyptian government to undertake the planning of the social, economic and cultural development of the country. Having concentrated the greater part of potential accumulation in its own hands, the state obtained opportunities to determine the basic proportions between capital investment in the economy proper and in the social infrastructure (public education, health protection, culture, etc.). Planning was given a complex character so that quantitative and qualitative growth of labour resources became an organic element in the system of goals formulated by the planners and the top leadership of the state. The expenditure on improving workers' skill, protecting their health and on meeting their cultural requirements has brought a "high return" which can be expressed by certain economic indices. There are no exact methods, of course, for determining the contribution of the social infrastructure to indices of growth of the end product, but there is no doubt about its influence.

Consequently, effective solution of social problems and development of the social infrastructure were achieved on the basis of the reconstruction of outdated social and economic relations throughout the national economy, and the transition to a complex and, in the long run, optimal planning system, orientated on socialist methods of economic management and implementation of a cultural revolution. Its success therefore depends upon rapprochement with socialist countries in all areas of economics, politics and cul-

ture, upon a striving to make the fullest use of their experience and assistance, including direct aid in the fields of education, health protection, culture, etc.

* * *

The events of recent years have shown that the ruling circles of Egypt have rejected many of the progressive achievements of the 1952 revolution and committed President Nasser's socialist legacy to oblivion. Cairo's decision to terminate the validity of the Soviet-Egyptian Treaty on Friendship and Co-operation was the last of a line of demonstrations of the unfriendly policy towards the USSR which President Anwar Sadat has been following for a long time.

From the moment he came to power Sadat has been consistently aiming to shift Egypt into a capitalist line of development. The 1974 law on foreign investment, which he personally initiated, opened the door to foreign capital in Egypt, thus wiping out the role and significance of the state sector in the Egyptian economy. One can suppose that changes in Egypt's internal and external policies will also have a negative effect upon further social and cultural development in the country.

It was announced by TASS on the 16th of March, 1976, that the Soviet Union had always conducted and would continue to conduct a principled and consistent policy aimed at developing friendly relations with the Arab Republic of Egypt, and with the Egyptian people.

¹ In the first 20 years after the conquest of Egypt (1882) the British authorities did not spend more than 1 per cent of the budget on education. The rise of the national liberation movement, however, at the beginning of the twentieth century, the awakening of national consciousness in Egyptians, the activities of the Nationalist Party under the leadership of Mustapha Kamil and his closest associates, and finally the 1919 revolution, forced the colonial authorities to make some increase in expenditure on education. By 1920/21 it had reached 4 per cent of the budget.

² On the history of education in Egypt see: D. N. Wilber, *United Arab Republic of Egypt, Its People, Its Society, Its Culture*, New Haven, 1969; M. K. Harbi and el-Sayed M. el-Azzawi, *Education in Egypt (UAR) in the 20th Century*, Cairo, 1960; Fahim I. Qubain, *Education and Science in the Arab World*, New York, 1966.

³ In the *Charter of National Action* read by President Gamal Abdel Nasser at the opening of the National Congress of People's Forces on May 21, 1962, it was stated: "The right of each citizen to receive education which suits his abilities and talents. Education is the means of consolidating... human freedom; it is also the energy which can rejuvenate national action."

⁴ See *Statistical Pocket Yearbook, 1952*, Cairo, 1953, p. 61; L. I. Lushnikova, *Gosudarstvenniye finansy OAR* (State Finances of the UAR), Moscow, 1971, pp. 170-71.

⁵ The weekly curriculum consists of 30 to 32 lessons of 45 minutes each.

⁶ *Statistical Pocket Yearbook, 1954*, Cairo, 1955, p. 21; *Statistical Abstract of the United Arab Republic 1951/52-1969/70*, Cairo, 1971, p. 130.

⁷ Israeli aggression caused serious damage. Evacuation of the population of the front-line strip (only 30,000 out of 300,000 inhabitants remained in Port Said, schools were closed and factories ceased working; there was a similar situation in Ismailia and other places) forced the educational authorities to expand the network of schools in the towns and villages of the Nile Valley.

⁸ *A Guide for Educational Statistics 1966-1967*, Cairo, 1967, pp. 4-6.

⁹ *Statistical Abstract of the United Arab Republic 1951/52-1968/69*, p. 131.

¹⁰ *Ibid.*, pp. 134-35.

¹¹ *Al-Mussawar*, No. 8, 1971.

¹² *Statistical Pocket Yearbook, 1952*, p. 65; *Statistical Abstract of the United Arab Republic 1951/52-1968/69*, pp. 137, 148; *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 11, 1970, pp. 156-57.

¹³ Israeli aggression prevented the opening of a university in Ismailia.

¹⁴ *Statistical Abstract of the United Arab Republic 1951/52-1969/70*, p. 141.

¹⁵ The author visited Al-Azhar in 1966. The proximity of a football field and open-air classes for the students of religious subjects made a peculiar impression. The great Egyptian writer Taha Hussein gave a vivid description of Al-Azhar of the turn of the century (see Taha Hussein, *Dni*, Moscow, 1958); James Aldridge (*Cairo. Biography of City*, London, 1970) describes Al-Azhar of today.

¹⁶ There was a high percentage of foreign students attending Egyptian higher educational establishments. In 1966/67 there were 34,000 (24,745

from Arab countries). See *The Middle East and North Africa 1969/70*, London, 1969, p. 815.

¹⁷ See N. K. Kotsarev, *Obyedinyonnaya Arabskaya Respublika. Pechat, Radio, Televideniye* (The United Arab Republic. Press, Radio, Television), Moscow, 1969.

¹⁸ *The Middle East and North Africa 1969/70*, London, 1969, p. 827.

¹⁹ While the author was in Egypt in 1966 he once talked to an illiterate fellah in the El Fayum district, who proudly pointed to his transistor and said that he was well informed on events in the Arab East.

²⁰ One of the first publications on Egypt's public health problems is T. A. Kobakhidze's article in *Sovetskoye zdavookhraneniye*, No. 5, 1966, p. 81. It contains certain information on the development of the health system.

²¹ The previously cited "Charter of National Action" stated "the right of each citizen to medical care, whether treatment or medicine, which would not become a commodity for sale and purchase. It would become a guaranteed right not dependent on a certain price. This care should be within the reach of every citizen, in every part of the country.... Health insurance must be expanded to embrace all citizens.

²² *Statistical Abstract of the United Arab Republic 1951/52-1967/68*, pp. 141, 146.

²³ See: B. Izakov, *Puteshestviye s dvumya pasportami* (A Journey with Two Passports), Moscow, 1968, pp. 106-07.

²⁴ *Statistical Pocket Yearbook. 1952*, Cairo, 1953, p. 219; *Statistical Yearbook 1968*, 1969. As a result of the increases in wholesale and retail prices over the past 15 years real state expenditure on health rose somewhat more slowly than the nominal sums of budgetary expenditure.

²⁵ The Ministry of Health was organised in 1936, but the foundations of a real national health service were in fact only laid after the 1952 revolution.

²⁶ As can be seen from these figures the number of hospital beds rose three times more slowly from 1952 to 1969 than total expenditure on health. This was because, firstly, the main concentration in the sixties was on the implementation of sanitary, hygienic, and prophylactic measures; secondly, because of the sharp increase in expenditure on the training and pay of medical personnel, and thirdly, the great increase in the cost of building hospitals, which are now provided with the latest equipment.

²⁷ *The Health Services of the UAR*, p. 5.

²⁸ *Ibid.*

²⁹ Smallpox was already known in Ancient Egypt. Studies of

the mummy of Rameses V have shown that he had had this disease.

³⁰ Leprosy is mentioned in the famous Ebers papyrus; segregation of lepers was decreed in the Code of Hammurabi.

³¹ See: *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 11, 1970, pp. 156-57.

³² "Charter of National Action", Cairo, 1962, p. 53.

³³ I. P. Ivanova, *op. cit.*, pp. 202-03.

³⁴ *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 11, 1970, pp. 154-57.

IRAN

Over the past decade or so Iran has undergone significant social and economic changes. The events in the Middle East leading to the fall of the monarchical regimes in Iraq, Egypt and Yemen, the revolutionary transformations in Syria and the countries of the Maghreb, and the attempts of certain governments in Asia and Africa to gain popularity by the use of socialist slogans, and in some cases of plans to adopt a line of social progress (expressed as "our own" or "national socialism") have all had a definite effect on the social and political life of Iran and been a cause of profound anxiety to her ruling circles, an anxiety all the more given grounds by the tense atmosphere in the country.

Peasant unrest and demonstrations by the proletariat, students and youth, the growth of democratic forces, and the demands of a section of the national bourgeoisie for limitation of the Shah's power forced the ruling classes and the head of state to take steps to strengthen their power. This gave rise to the idea of carrying out a whole set of measures (involving both the economy and social relations) called by its initiators, not without political undertones, the "white revolution". These measures, namely, bourgeois agrarian reform, the building up of a modern industry, the extension of constitutional rights, and in particular, abolition of the subordinate position of women,¹ the development

of education and a health service, etc., were aimed objectively at eliminating pre-capitalist relations and survivals of feudalism. This naturally gave rise to certain complications² not easy to overcome and provoked resistance, primarily from the big landowners and the Shiite clergy, who protested against the agricultural reforms, the granting of equality to women, state interference in religious affairs, and the efforts to break the clergy's monopoly role in the education of the young.

Nevertheless, the economic changes have brought success through exploitation of the country's mineral wealth, especially oil.³ Economic growth strengthened the state sector in the heavy and oil industries, but at the same time strengthened private capital in manufacturing and the services sector. There has been an increase in the number both of small landowners and of workers and wage-earners of all kinds. The population has changed largely both in size and composition (Table 21), the number of town dwellers

Table 21

The Population of Iran

	1956 Census	1966 Census
Total population	18,954,704	25,781,090*
Urban population	5,449,161	9,820,922
Rural population	13,264,354	15,318,231
Nomadic population	241,189	641,937

Source: *Iran Almanac*, 1970, Teheran, 1970, pp. 471, 547.

* 13,337,334 men and 12,443,756 women.

increasing by 80 per cent and the rural population by only 18 per cent. There has been intensive migration from the countryside to areas of increased economic activity.

The reforms that are being undertaken signify a strengthening of the capitalist system, so the idea that Iran has

chosen some third way (i.e., neither capitalist nor socialist) is erroneous, to say the least.⁴

With the speeding up of social and economic development and internal political processes a certain change has also been noted in Iran's foreign policy, a break from one-sided orientation on the USA and the Western capitalist powers, normalisation of relations with the USSR, and a broadening of contacts with Rumania, Hungary, Czechoslovakia, Poland and Bulgaria.⁵ This is also indicated by a series of actions in foreign affairs supporting peoples struggling against colonialism.

A result of the improvement in Soviet-Iranian relations was the signing on January 13, 1966, of a treaty on economic and technological co-operation, envisaging the building of hydrotechnical installations on the river Araks, a metallurgical plant in Isfahan, an engineering works in Arak and a Trans-Iranian pipeline to supply gas to the USSR.⁶ The mutual visits of statesmen have had great significance for these relations: the Shah's visits to the USSR in 1965 and 1968, and those to Iran of L. I. Brezhnev (1963), A. N. Kosygin (1968 and 1973) and N. V. Podgorny (1970 and 1971).

Iran, however, is still a member of CENTO and has a bilateral military treaty with the USA.

Reform in the Educational System

The course taken by the government in reorganising the economy dictated the need for introduction of rapid cultural changes. According to the 1956 census 85.1 per cent of Iran's population was illiterate and only 7.3 per cent of women could read and write (religion prevented their education). There was a drastic lack of teachers in village schools, and in national minority areas there were no elementary schools in the local languages. Radical measures were called for.

Important measures began to be carried out at the beginning of the sixties, aimed at eradicating illiteracy and developing public education, national science and culture. The most important ones were adopted as a result of a referendum (in 1963) on a bill to set up a Literacy Corps for the purpose of eliminating mass illiteracy, especially among the rural population. The law provided for all school-leavers and graduates to be called up for the army for 18 months, four months to be devoted to military training and study of basic pedagogics (financed by the Ministry of Defence). The conscripts were then to be promoted to the rank of sergeant, and assigned to the Ministry of Education (the periods of conscription were later increased to 24 months, six months and eighteen months respectively). The law provided that they could be sent to their native villages, but the first group of 2,460 was sent in May 1963 to remote parts of the country. By 1968, 32,000 members of the Corps had served in these areas, and between 1963 and January 1972⁷ 84,920 people had passed through its ranks, with many remaining in the army as teachers in the Corps' elementary schools.

These schools, which cater for children during the day and for adults in the evening, differ markedly from ordinary schools in the way they work. They take children of between six and ten in the first class, up to 12 in the second class, up to 14 in the third class, and up to 15 in the fourth class.⁸ Such a system, of course, creates extra difficulties, but teenagers who have missed normal enrolment are thus provided for, which reduces the number of potential illiterates. The economic effect is also significant: the cost of educating a person in Corps schools (mainly in the village) is only a third that in general schools.

In 1965/66 the number of rural pupils was 1,320,000 (compared with 675,000 prior to 1962). In five years 450,000 boys, 120,000 girls, 240,000 men and 110,000 women were taught.⁹

The functions of the Literacy Corps also include ideo-



A Literacy Corps school

logical work (propagandising the successes and achievements of the existing regime), educational work on hygiene (using special visual aids and films)¹⁰ and concern for improving villages and planting trees. Its members initiated projects, based on peasant self-help, which led to the construction of public buildings and bridges and the digging of wells. Between 1963 and 1972 14,560 schools were built, 4,100 public baths, 50,200 bridges and some 135,000 kilometres of roads.¹¹

In July 1968 Iran adopted a law obliging all girls and women with secondary or higher education to take part in the campaign against illiteracy and in the work of educational, health, and sanitation organs.¹² In March of the



A lesson in handicrafts

next year 1,895 girls with secondary education were sent to work in villages after six-months' training in courses on the Corps system. In November 1969 another 825 were sent and in the middle of 1970, 1,666 more. The girls were given the right to choose where they would be sent. About the same time 212 women with higher education were called up and directed to jobs after 150 hours' military training. By January 1971 the number working in rural areas had risen to 16,499. In addition, 4,743 people from the 17th male and the 5th female conscription completed training courses by April 1971.

The numerical increase of the Corps necessitated the creation of a special leadership service to exercise methodolog-

ical and ideological control; but in cases of need Corps members can take various work problems directly to the Ministers of Defence and Education, which both adds to their authority and eases the decision of difficult practical problems.

Despite the expenses incurred by short training periods and the vast scale of the Corps' activities, the results of this venture deserve attention and will certainly have a positive effect on the further development of Iran's culture and economy. Her experience in this field can probably also be used in other Third World countries.¹³ In 1972 UNESCO awarded the Nadezhda Krupskaya Award, established by the USSR, to the Iranian Literacy Corps for achievements in combating illiteracy.

An extensive propaganda campaign, dressed up in nationalist and religious slogans, contributed to the Literacy Corps' success. The ruling circles, despite the tension in their relations with the higher Moslem clergy, are trying to find ways of reconciling their positions, especially on questions relating to education and upbringing. The basis for the effort is that Shiite clergy do not have a united standpoint on these questions. Some maintain traditional views on the role of religion in society and oppose mass education and scientific and technological progress. Others consider it necessary to adapt religion to the needs of modern life and support the idea of bringing culture to the people and of reforms. Individual religious leaders argue the importance of spreading knowledge among the people on the specific grounds that all Moslems should be educated in order to take part in political life and defend the interests of Islam.¹⁴

The government and the Shah have repeatedly emphasised the importance of observing the laws of the Shariat and of studying the bases of Islam (the "eternal and progressive religion"), and the duty of the clergy to ensure the "moral purification of society".¹⁵ They have also considered it useful to base themselves on the authority of Islam to con-



Eliminating illiteracy

firm the correctness of the measures chosen to combat illiteracy. Hence the Literacy Corps has adopted as its motto the saying attributed to the Prophet Mohammed that "the acquisition of knowledge is the duty of every Moslem man and woman".

Despite the success of the Corps' work, illiteracy remains an unsolved problem for Iran and calls for constant attention and large investment. The World Conference on the Eradication of Illiteracy held in Teheran on September 8-19, 1965, had great significance in extending the campaign. The Conference recommended the planning of educational development and urged that special attention be paid to the problem of making women literate, in view of the high rate of female illiteracy and woman's role in the education of the family and in society.¹⁶ The confirmation of the need for instruction in the native language was also of political importance.

Table 22

Literacy in 1956 and in 1966

Area	1956			1966		
	Population over ten years of age	Literate		Population over ten years of age	Literate	
		Total	Per cen- tage		Total	Per- cen- tage
Whole country	12,784,031	1,910,630	14.9	16,535,844	4,649,841	28.1
Urban	4,186,881	1,396,150	33.3	6,746,439	3,310,769	49.1
Rural	8,597,150	514,480	6.0	9,789,405	1,339,072	13.7

Source: *Iran Almanac*, 1971, p. 539.

According to the 1966 census less than 30 per cent of the population could read and write (Table 22), and only 2 per cent of the 5,500,000 literates had received higher education and 18 per cent elementary and secondary education. The third five-year plan proposed reducing the level of illiteracy among people over 12 years of age to 60 per cent, but this target was not reached.¹⁷

In 1967 a Committee for Combating Illiteracy, with the appropriate services in various parts of the country, was founded. In December of the following year the Iranian parliament adopted a law obliging every literate person and every student who had been educated abroad to teach at least one illiterate person to read and write.¹⁸ All civil servants have to give evidence of active participation in the campaign, and if someone refuses to take part he is obliged to pay the sum needed to teach 25 illiterates—5,000 rials.

An important role in the campaign is played by village cultural centres (of which there were 207 by the close of 1970), which hold lectures, film shows and exhibitions of photographs, and are responsible for ideological indoctrination. Sports clubs, libraries, etc., are being built under

their auspices. They are also linked with the local agricultural co-operatives and with several national bodies (the Ministry of Information, for example, supplies them with radio equipment and literature). Their work and the training of their staff is supervised by the National Society of Rural Cultural Centres.

The fourth five-year plan envisaged a considerable extension of the campaign against illiteracy. By the time of its completion 9,000,000 out of the 15,100,000 in the 10-45 age-group were to achieve literacy, with 2,400,000 studying in Literacy Corps schools and courses, and the remainder in courses run under the national campaign. A special textbook of functional literacy was published for the latter courses. In 1970 861,657 men and women attended literacy classes.¹⁹ The target date for the complete elimination of illiteracy in Iran is 1982.

The Educational System

Education has developed in Iran in several stages in the twentieth century.²⁰ The first official report on the state of education, published in 1911, revealed that only 16,000 pupils were attending all of the country's schools, including the many religious ones, which meant that there was less than one pupil per every thousand inhabitants. The 1918 Statistical Yearbook noted that the total number had risen to 26,000. By 1941 there were 2,331 elementary schools, 321 secondary schools, 29 teacher training colleges, six vocational schools and about 300,000 pupils.

During the complex period of Iran's history from 1941 to 1953 the rate of development of education slowed down, although the absolute figures continued to grow. In 1953 870,000 people were studying in 6,700 academic centres.

In the next decade more attention was paid to educational problems, expenditure was increased and the network of institutions was extended, but it was not until 1962 that a

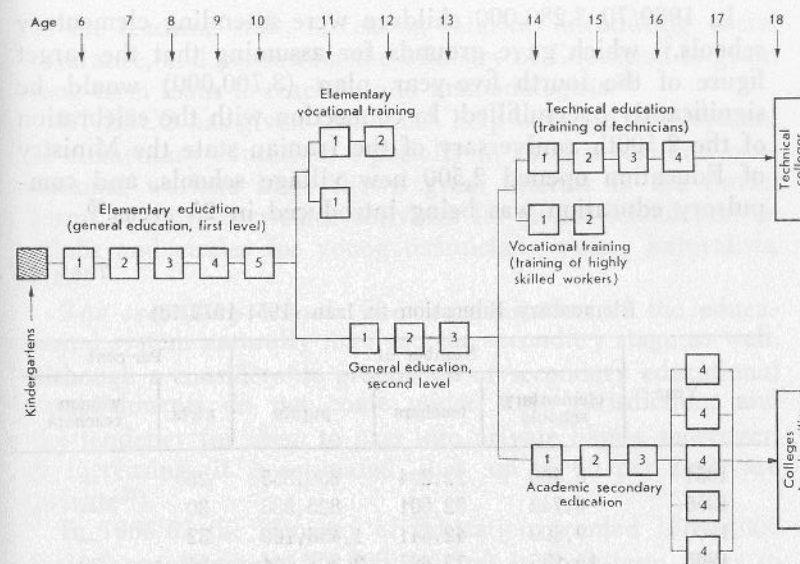
radical re-examination of state educational policy at all levels was begun. In that year 2,000,000 pupils were studying in 14,000 elementary, secondary and vocational schools, while 25,000 students were attending higher educational institutions inside the country.

The logical extension of this line was the decision taken in 1968 to reform the school system, and now being implemented. The reform envisaged a five-year elementary school (for children between six and eleven), then a three-year general course, which was eventually to become compulsory, and finally a three-year course of academic secondary education followed by specialisation in the fourth year. It was assumed that study of the chosen field would be continuous at a higher educational establishment. All schools were to change over to the new structure by 1972, which should mean a substantial increase of pupils at all levels, including pre-school education (Table 23).²¹

Elementary education. In accordance with the educational reform the period of elementary education in Iran was reduced from six years to five. The content of the curricula underwent re-examination with the aim of adapting it to the new demands of economic development. At the present time the curriculum (24 to 28 lessons a week) includes the following subjects: religion and morals, Persian, arithmetic and geometry, the fundamentals of the social and natural sciences, arts and crafts, physical training, calligraphy (in the senior classes) and music.²² Pupils take examinations after five years, and those who pass them receive a certificate of elementary education.

Instruction is free and compulsory, but in many rural areas and in dwelling-places of nomadic tribes far from all school-age children attend²³ classes (there being four times more boys than girls among the schoolchildren in these places).

It is estimated that elementary education will only become universal in Iran by 1982, though the numbers of schools, pupils and teachers are increasing steadily (Table 24).



Elementary and Secondary Education

Table 23

Development of Education by 1973

Type of school	Pupils (000s)		Increase		Number of pupils at the end of 4th plan (000s)	Increase	
	At the end of 2nd plan	At the end of 3rd plan	(000s)	per cent		(000s)	per cent
Kindergarten	13	16	3	23.1	20	4	25
Elementary school	1,719	2,900	1,181	68.7	3,738	838	29
Secondary school	336	658	322	95.9	1,328	670	101
Vocational and technical school	9	17	8	88.9	50	33	194
Higher school	24.6	37.5	12.9	52.4	60	22.5	60

Source: *Iran Almanac*, 1973, p. 540.

In 1969/70 3,280,000 children were attending elementary schools,²⁴ which gave grounds for assuming that the target figure of the fourth five-year plan (3,700,000) would be significantly overfulfilled. In connection with the celebration of the 2,500th anniversary of the Iranian state the Ministry of Education opened 2,500 new village schools, and compulsory education was being introduced in 25 areas.²⁵

Table 24

Elementary Education in Iran (1951-1972/73)

Year	Number of			Per cent	
	elementary schools	teachers	pupils	girls	women teachers
1951	5,400	22,204	650,355	26	—
1955	6,742	32,801	823,983	30	—
1960	9,809	42,541	1,436,169	32	—
1965	15,135	72,867	2,208,671	34	39
1966	14,740	75,502	2,411,505	34	43
1967	22,377*	—	2,845,104*	—	—
1969	23,097*	—	3,046,100*	—	—
1972/73	26,024*	—	3,494,000*	—	—

Sources: *Statistical Yearbook, 1968*, p. 118; *Allgemeine Statistik des Auslandes, Länderkurzberichte, Iran, 1970*, Stuttgart und Mainz, 1970, SS. 13-14; *Iran Almanac, 1973*, p. 396.

*Including Literacy Corps schools and pupils.

Greater attention has been paid to the training of teachers, of whom there were around 90,000 in 1968/69, 67,500 working in elementary schools (not counting Literacy Corps teachers). Since 1967 regular radio and television programmes in various school subjects have been broadcast for teachers; lectures following refresher programmes are also organised. The effectiveness of television for education purposes within a 100-kilometre radius around Teheran convinced the Ministry of Education that it was essential to establish school television stations in a number of provinces. Steps have also been taken aimed to improve the conditions

of the teaching staff, increasing salaries, introducing social insurance, and permitting the Ministry of Education to grant long-term loans to teachers and methodologists.²⁶

UNESCO has given Iran much help with the development of elementary education, especially in rural areas; and educational workers have shown great interest in the Soviet forms of extra-curricular activities for junior schoolchildren (clubs and circles for young technicians, young naturalists, etc.).

The secondary school. The reorganisation of the educational system naturally involved the secondary stage as well, although a considerable proportion of secondary educational establishments do not come under state jurisdiction, and the tendency for them to pass into private hands, moreover, is increasing (it is estimated that up to 80 per cent are private²⁷).

In 1966/67 the Ministry of Education granted 13,700,000 rials (approximately 172,000 dollars) in long-term loans to private persons for the building of schools with modern equipment.

With the development of secondary education in the sixties (Table 25)²⁸ the question arose of re-examining its content and vocational bias. The need for cadres trained to take part in the reforms initiated by the Shah and his government and unquestionably loyal to them called for new curricula that would meet these needs through their scientific and ideological orientation (Table 26).

Specialisation became more marked in the advanced type of secondary school (those with a mathematical, literary, or natural science bias), especially in the fourth year of study, in which 80 per cent of the subjects are compulsory and 20 per cent are optional (Table 27). Pupils in the 11th and 12th classes take final examinations, after which they can either go on to higher educational establishments or continue their studies in technical institutions.

The reorganisation of advanced secondary schools into polytechnical or humanities schools is still not completed.

Table 25

Secondary Schools in the Third Five-Year Plan

Year	Urban schools		Rural schools		Total
	state	private	state	private	
1961/62	684	198	300	2	1,184
1962/63	685	205	316	1	1,207
1963/64	703	251	307	8	1,269
1964/65	742	191	367	2	1,302
1965/66	793	331	427	3	1,554

Source: *Iran Almanac*, 1968, p. 517.

In 1968/69 a number of steps were taken to decentralise the management of education and increase the responsibility of local bodies.²⁹ In 1970 a considerable effort was made to set up 11 regional centres for teachers' refresher courses and for training school administrators.

Vocational and technical education. The growth of the economy, the beginning of industrialisation, the refitting of enterprises with modern equipment, the development of oil refining and the chemical industry and the creation of an iron and steel industry have brought the problem of cadres and its associated problem of a change in the system of training to the fore. The situation when 70 per cent of the workers in manufacturing were unskilled and 86 per cent in textiles (as in 1957/58) can no longer be considered normal.

During the drafting of the fourth plan a reliable estimate of the need for qualified labour at all levels was at last made.

The first iron and steel, engineering and tractor works and the many other enterprises built under the third five-year plan needed around 1,200,000 new workers and technicians. By 1972-1973 the number of industrial workers

Table 26

Timetable of Existing and Projected Curricula for Incomplete Secondary Schools—6th-8th classes (length of lesson 45 minutes)

Subject	First year		Second year		Third year		Total		Change in number of hours
	existing	projected	existing	projected	existing	projected	existing	projected	
Religion and morals	2	3	2	3	2	3	6	9	+3
Persian	6	6	6	5	5	5	17	16	-1
Experimental sciences (physics, chemistry, natural sciences, hygiene)	4	5	4	5	6	5	14	15	+1
Mathematics	4	5	4	5	4	5	12	15	+3
Arabic	2	—	2	1	2	1	6	2	-4
History and geography	3	3	3	3	3	3	9	9	—
Foreign languages	4	4	4	4	4	4	12	12	—
Manual training (domestic science, crafts)	3	4	3	4	2	4	8	12	+4
Physical education	2	2	2	2	2	2	6	6	—
Art (drawing, sculpture, music)	1	2	1	2	1	2	3	6	+3
Calligraphy (in the new programme this is included in Art)	1	—	1	—	1	—	3	—	—
Total	32	34	32	34	32	34	96	102	+9

reached over two million, with a minimal proportion of unskilled labour.³⁰ In 1970-1971 the private sector was responsible for training 81,000 workers.

In striving to accelerate the creation of the necessary cadres, the government had already in the fifties expanded the system of factory apprenticeship and begun to open industrial schools and other special teaching establishments; but this was hampered by the low level of literacy, the small differential between the pay of skilled and unskilled workers and by the shortage of schools. In the ten years 1950-

Table 27

Timetable of Advanced Specialised Secondary Schools, 10th-12th classes (lessons per week)

Subject	Bias of school								
	Literary			Mathematical			Natural Sciences		
	Class			Class			Class		
	10th	11th	12th	10th	11th	12th	10th	11th	12th
Mathematics	2	2	—	7	7	10	3	3	2
Physics	—	—	—	4	4	6	4	4	4
Chemistry	2	2	—	3	3	3	4	4	4
Natural sciences and hygiene	2	—	—	2	2	—	5	5	9
Arabic studies	4	4	4	—	—	—	—	—	—
Foreign languages	5	5	6	4	4	4	4	4	4
Persian language and literature	6	6	7	3	3	3	3	3	3
Social sciences, history and geography	4	4	6	2	2	—	2	2	—
Logic and philosophy	—	2	5	—	—	2	—	—	2
Religion and morals	1	1	—	1	1	—	1	1	—
Draughtsmanship and manual training for boys and domestic science for girls	2	2	—	2	2	—	2	2	—
Physical education	2	2	2	2	2	2	2	2	2
Total	30	30	30	30	30	30	30	30	30

1960 the number of pupils in vocational secondary schools only rose from 1,400 to 9,100; vocational education only began to develop seriously after 1963. It is provided by special schools where training does not exceed two years and which turn out skilled workers for industry and agriculture, and by four-year technological colleges training skilled craftsmen, foremen, technicians, managers and administrators.³¹

The 1968 Ramsar conference showed that it would be necessary, in connection with the need for technical cadres

Table 28

Agricultural Educational Establishments, 1969/70

	Number of		
	educational establishments	teachers	students
Higher	5	227	1,732*
Intermediary colleges	2	45	257**
Vocational schools	22	225	2,249
Agricultural courses	3	—	150

Source: UNESCO. *Agricultural Education in Asia*, 1971, p. 127.

* Including 168 women.

** Including 56 women.

with intermediate qualifications, to end the disproportion rapidly between the number of students in higher educational establishments (47,000) and in technical colleges (17,000).

In 1969/70 Iran had 154 vocational technical and trades schools with 19,000 students³² (many of them had also organised re-training courses for workers). This number included, apart from the traditional carpet-weaving schools and colleges of arts and crafts, technical colleges specialising in electrical engineering, metallurgy, motor mechanics and other modern trades. The biggest colleges of this kind are in Teheran, Abadan and Isfahan.

Agriculture is supplied with cadres by special secondary and higher educational establishments (both governmental and private), and by advanced training courses for farmers (Table 28). By 1972 it was planned to train 6,030 technicians and raise the qualifications of 220,000 farmers,³³ to enable them to employ modern agricultural methods and apply the latest developments in seed-growing and the use of fertilisers. To this end model farms have been organised in various parts of the country to which the peasantry of the



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and Literature at Teheran University

surrounding areas can come for consultations and advice. Training in the fundamentals of agrotechnics has also been introduced for soldiers on regular service.

The fourth five-year plan assigned 4,176 million rials for the development of different kinds of vocational and technical education. Iranian state bodies are trying to follow the best examples in organising this sector of the educational system, and many advisers have been brought in from abroad. Foreign organisations are playing a considerable role in this. The US Agency for International Development, for example, spent a substantial part of its total budget of 605 million dollars on training engineering and technical cadres in the 15 years 1952-1967. Funds from the USA were used in 1962 to build the modernly equipped Narmak Technical College, which turns out both technicians and

teachers for vocational and technical schools in automobile engineering, radioelectronics and metalworking.

The Federal Republic of Germany helps to train specialists for the motor vehicle industry and quite extensively to set up agricultural colleges and schools, while France is involved in the work of the Isfahan Textile Institute and in the training of agricultural specialists. French credits amounting to 60 million dollars were used to set up five academic centres for training secondary technical personnel.³⁴

The Iranian Ministry of Labour sent some 500 workers to France, the FRG, Britain and Italy for experience in the engineering and iron and steel industries.

Iranian educational officers display great interest in the organisation and working of the system of vocational and technical education in the USSR. In accordance with the agreement on building the Isfahan steel mill, the Arak machine-tool plant, and the Trans-Iranian gas pipeline, mentioned above, the Soviet Union set up five centres to train personnel to build and operate them.

In 1970, in Teheran, a protocol on the future development of economic and technological co-operation and an agreement on co-operation in the field of industrial and technical education over the next 12 to 15 years was signed. Soviet specialists are helping consolidate and extend technical schools and colleges for training cadres for the iron and steel and non-ferrous metal industries, the petrochemical industry, etc. The newspaper *Tehran Journal* said the Soviet-Iranian protocol was the most long-term agreement Iran had ever signed. Hushang Ansari, the Minister of Economics, said at the signing of the protocol that in spite of the difference in the social systems of Iran and the USSR, economic co-operation between them had yielded and was yielding valuable results, and for that reason they would continue in the future to make maximum efforts to extend and strengthen these ties.

Higher education in Iran is developing quite rapidly with the intake of colleges increasing steadily each year. Whereas

there were little more than 36,000 students in 1966/67, in 1968/69 there were 46,611, and in July 1970 67,268, which exceeded the numbers envisaged by the fourth plan;³⁵ and in 1971/72 there were 75,000 students.³⁶

The country has eight universities, several dozen colleges (in particular teacher training and technical), and advanced schools and departmental teaching establishments (Table 29). The Ministry of Defence has a military academy, various special colleges, and schools for junior commanders, which train army and navy personnel (at present military education is also undertaken in the universities).³⁷

The largest higher educational establishment in Iran is the University of Teheran, founded in 1934. At that time it had six faculties (Medicine, Engineering, Law, Natural Sciences, Persian Language and Literature and Theology). At the time of writing it had 17 faculties (Forestry was added in January 1970), and an evening department with more than 400 students. The university is a huge complex with up-to-date equipment. Since 1970 its lecturers have been making experimental educational television broadcasts.

Tabriz University has existed since 1947, and more recently has opened departments of electromechanics and astrophysics. Since 1955 Ahwaz has had the Jundi Shapur University with three faculties: Medicine, Pedagogics and Agriculture. In 1969 it organised courses for radiologists and pharmacists.

In 1966 the Aryamehr Industrial University was founded with the aim of providing personnel to cope with the tasks of national economic development. It has six faculties: Electrical Engineering and Electronics, Mechanical Engineering, Chemistry, Metallurgy, Industrial Management (economics and management), and a theoretical faculty with a mathematical bias.

The following figures on the number of students in 1969/70 give an idea of the quantitative side of the work of Iran's universities:



In a laboratory of the Medical Faculty
of Teheran University

Teheran	17,079	Meshed	2,995
National (Teheran)	5,054	Isfahan	3,594
Pehlevi (Shiraz)	3,116	Aryamehr	1,530
Tabriz	4,326	Jundi Shapur (Ahwaz)	1,250

The quality of the training of graduates remains a serious problem and is partly linked with the acute shortage of qualified lecturers. It was not by chance that after the criticism made by the Shah and the Prime Minister A. Hoveida, in August 1968, of the standard of education all the rectors of the universities resigned and were replaced.

In the past the country's higher education was predominantly slanted toward the humanities, but it began to be reconstructed in the sixties with the aim of adapting it to the needs of economic growth. In 1968/69 the distribution of students among the disciplines was as follows:³⁸

Literature and theology	9,216	Jurisprudence	2,247
Medicine	8,694	Agricultural subjects	1,819
Economics	7,279	Pedagogics	1,645
Natural and exact sciences	6,701	Art	864
Engineering	5,733	Management	719
Sociology, history and philosophy	4,694		

Table 29

Higher Education in 1966/67

Establishments				Number of students		
	universities	colleges	advanced schools	Total	Men	Women
State colleges and universities	5	36	—	22,144	17,784	4,360
Non-governmental universities and higher schools	3	16	3	8,455	5,589	2,866
Establishments under the Ministry of Education	—	—	4	3,384	3,004	380
Establishments under other ministries	—	4	32	4,113	2,848	1,265
Total	8	56	39	38,096	29,225	8,871

Source: *Iran Almanac*, 1969, p. 508.

The reconstruction has continued as the statistics in Table 30 for 1972 indicate.

During the fourth five-year plan there was also a certain reorientation in higher education on the financial plane. Capital expenditure on the natural sciences and technical faculties reached 1,482,000 rials and on the humanities 255,000. This was associated with a typical Iranian phenomenon, a change in the composition of students and therefore, also, of highly qualified personnel. A slow but discernible democratisation is taking place in higher education, encouraged by the practice of giving scholarships to able students, assistance in getting work to those who need it, etc. The proportion of women specialists and students is also

growing. In 1967-1969 about 12,100 girls were studying in the country's higher educational establishments (almost 20 per cent of the total number of students). There were about 40,000 women teachers in schools and 407 women scientists in the universities and higher educational establishments.

The need to supply the country's industry, especially the newly built enterprises, with Iranian engineers and technicians obliged many higher educational establishments to increase their student intake.

In an interview with the journal *Talash* in 1969, the Rector of the Narmak Polytechnical College formulated the tasks which lay ahead as follows:

"In the first place, our institute must become an important centre training engineers for the country's various industries. By the end of the fourth five-year plan Iran will need ten thousand specialists able to master the technology of a particular industry.

"Second, its day and evening departments must turn out practical engineers who can replace foreign specialists each one of whom receives 2,000 dollars a month from the state. Unfortunately, most of our industrial enterprises are built without considering whether there are the necessary engineering and technical cadres which is a great mistake.

"Third, we must draw up a curriculum for all the country's polytechnics.

"At present there are 3,220 students in the institute's day and evening departments. The day course takes four years, the evening six. The tuition fees, and charges for the use of textbooks and the library are respectively 3,000 rials and 9,000 rials a year. Would-be entrants sit a competitive examination. Graduates receive an engineering diploma and an appointment.

"Young men and girls study together. Girls are widely represented among candidates, numbering 300 last year out of a total of 700. This year there were 80 girls among the 500 students enrolled in the various faculties, and around

Table 30

Proposed Number of Students by Faculties
for 1972

Specialisation	Number of students	Per cent of total
Natural scientific disciplines		
Veterinary science	500	1.5
Agricultural	2,550	7.7
Natural sciences	5,500	16.7
Engineering and architecture	8,900	26.9
Medicine	10,600	32.1
Stomatology	1,150	3.5
Pharmacology	1,400	3.3
Teaching of technical subjects in secondary schools	2,700	8.3
Total	33,000	100.0
Humanities		
Pedagogics and literature	10,600	39.3
Legal and social sciences	5,600	20.6
Economics and management	9,500	35.2
Theology	1,300	4.9
Total	27,000	100.0
Grand Total	60,000	100.0

Source: *Iran Almanac*, 1970, p. 517.

40 girls in the evening department. It must be said that girls are more attentive in practical work than youths. By the end of the fourth five-year plan the institute will admit 6,000 students."³⁹

A substantial proportion of young Iranians still study science abroad. According to the 1970 figures there were nearly 26,500, including 8,000 in the USA, 5,000 in the FRG, 3,000 in Britain, 1,400 in Austria, 1,230 in France, 1,088 in Turkey, 591 in Sweden, 246 in Canada, 154 in the Lebanon, etc.⁴⁰

A certain number of these students do not wish to return home after graduation,⁴¹ which has a grave effect on Iran's economic development. Progressive opinion in the country, alarmed by the "brain drain", has called many a time for

restrictions to be put on the number of persons deciding to study abroad. It is similarly worried by the increased influence of imperialist ideology on the members of the intelligentsia receiving their education in West European and American institutions, and whom the Western states regard as allies in carrying out their neo-colonial policies.⁴²

This was partly reflected in the law setting up a Ministry of Science and Higher Education. One of its clauses made the ministry responsible for the return of graduates from foreign institutions. In addition the system of remuneration for scientific workers was reviewed, and strict control was established over the number of students being sent abroad and over the number of foreign specialists invited to work in Iran, with a reduction of their period of service.

Iran's fifth five-year plan envisages increasing the number of children in kindergartens to 415,000 by 1978/79, in elementary schools to five million, and the number of pupils in incomplete secondary schools to 1,500,000, in secondary schools to 953,000, in vocational and technical schools to 380,000 and the number of students in higher education to 190,000. It is also planned to give literacy instruction to around 15 million people.

Scientific Development

Until recently a mere 0.5 per cent of Iran's budget was devoted to scientific development (2 to 5 per cent in the West), and it was estimated that there were only three scientific workers per 10,000 inhabitants (50 in industrially advanced countries).⁴³

But in the mid-sixties serious attempts began to be made to change this situation radically. In 1967, as already mentioned, the Ministry of Science and Higher Education was formed to control the development of scientific research,

supervise the founding of new research institutes and laboratories and the extension of existing ones, and to co-ordinate their work on a nation-wide scale. State expenditure on this was also increased, the fourth five-year plan having assigned 8,800 million rials for it, which represented 1.08 per cent of budget expenditure. Of this sum around 50 per cent was for research in the field of agriculture.

The most important scientific centre is Teheran University, whose faculties and specially organised institutes and laboratories are working on such problems as the use of atomic energy (it has its own small reactor), and themes in hydrology, geophysics, hygiene and sanitation, economics, criminal law, Middle Eastern culture, etc. The University exercises scientific supervision over Iran's seismological service, which has developed considerably in recent years⁴⁴ and has stations in Teheran, Tabriz, Meshed, Shiraz, Kerman-shah, Kerman and Isfahan.

Research is also carried on at the universities of Tabriz, Meshed, Aryamehr and Pahlevi, in the recently-founded economic and botanical institutes, in the Pasteur Institute, the Institute of Cancer Research and in the Institute of Food and Nutrition. World Health Organisation plays an active part in medical research, financing several health projects (a campaign against schistosomiasis and anti-malarial measures).

Institutes working on the history and culture of Iran have had some success. They were particularly active in connection with the 2,500th anniversary of the Iranian state in 1971. Archaeological digs are sponsored by the Ministry of Culture and Art in conjunction with Shiraz and Teheran universities. In the major libraries (the Pahlevi and the Mejlis), which house very rich collections of manuscripts, studies of Iran's ancient and medieval history are conducted and bibliography embracing Iranian studies all over the world is compiled.

The Academy of Persian Language and Literature is engaged on the problem of standardising terminology and

preparing a reform of the written language (the question of going over to the Latin alphabet was discussed). Iranian scholars attentively follow the publications of Soviet specialists, and collaborate with them on publication of *Corpus Inscriptionum Iranicarum* and other textological works. They welcomed with gratefulness and respect the work done by Soviet scholars (1957-1971) in bringing out a nine-volume edition of Firdousi's *Shah Namah*, that outstanding memorial of Iranian culture.

It is still too early to speak of broad application of scientific advances to achieve economic growth, but some steps have been taken in this direction. Industrial research is being carried out under the guidance of two bodies: the Research Department of the National Iranian Oil Company and the Organisation for Standardisation and Industrial Research. In 1969 a special institute was founded within the system of the Ministry of Science and Higher Education, including a national centre for scientific and technical documentation and information.

The number of centres of this sort, which can supply interested institutions with the necessary documentation, is to increase, and contacts have already been established with foreign scientific institutions for this purpose. The buying of licences to produce modern technological and scientific equipment also encourages more active introduction of advanced technologies in industry.

There are also research institutes functioning under the Ministry of Agriculture, which employ scientists invited from the FRG and France. Iranian and Soviet specialists are working together on a number of themes, in particular the study of the Caspian Sea and ways of eliminating agricultural pests. At the request of the Iranian government the USSR has time and again sent expeditions to combat locusts.

There are great difficulties in the way of further development of Iranian science due to many causes, in particular, the absence of traditions in the new fields, the shortage of

laboratory facilities, the low standard of training of scientific personnel and the relatively low remuneration.

A real way of overcoming these problems would be for Iranian scientists to pool their efforts with colleagues abroad and carry out joint research in various areas of knowledge. The path of co-operation is very promising for countries whose resources do not permit them to mount an extended front of work in all fields.⁴⁵

It should be noted that Iran has turned from one-sided orientation on the USA and Western Europe in science too and has established contacts with socialist countries and countries in Asia and Africa. An important event in this context was the signing, in March 1971, of the agreement with the USSR on scientific and technological co-operation, which provides for exchange of the relevant information, scientists and experts, and joint work on scientific and technological problems.

"The Soviet Union and Iran," said V. A. Kirillin, Vice-Chairman of the USSR Council of Ministers, "have broad possibilities of co-operation; in agriculture, in particular, they have mutual interests in combating plant pests, cattle diseases, the reclamation of saline land and marshes, and the use of solar energy in agriculture. There are great prospects for co-operation in the field of public health and medicine, including the study of the causes of cancers and the development of methods of fighting them, and study of insects and animals that are vectors of human infectious diseases, etc."⁴⁶

It is this which determines the interest shown in the Soviet Union's experience of planning and organising research and of practical application of its results.

The Soviet-Iranian agreement continues the line of consolidating friendly relations between the two countries, and will be of real aid to Iran in developing her young science.

Mass Media

The press. Altogether 210 newspapers and magazines are published in Iran, 138 of them in Teheran (19 dailies) in Persian, two daily newspapers in English and one in French, and a monthly journal in Arabic. The two largest dailies, *Keyhan* and *Ettela'at*, have circulations of about 100,000.

Most publications are privately owned. The 1963 Press Law states that anyone wishing to publish a newspaper must be an Iranian subject, over 30 years of age, have higher education and meet a certain property qualification. The minimum circulation for newspapers is 3,000 and for journals 5,000. If sales fall below that, the proprietor's licence is cancelled. All printed material is subject to strict censorship.

An important part in the dissemination of information is played by the state-run PARS News Agency, which has a wide network of correspondents and is linked with many foreign information agencies.

Radio and television. The first broadcast of the Iranian national radio station was made on April 21, 1940. Today there is a three-programme station in Teheran, which also broadcasts in foreign languages (Arabic, Russian, English, French, Turkish and Urdu), and 38 stations in the other towns (Tabriz, Isfahan, Shiraz, Kerman, Meshed, Resht, etc.), the largest of which, in Ahwaz and Kermanshah, also make foreign broadcasts. Two stations broadcast part of the time in Kurdish and Beluchi.

Increasing the power of some of them, and the building of relay stations all over the country enable local stations to relay Teheran Radio. The 1969 figures indicated that there were some four million radio sets in the country, transistor sets, both imported and those assembled in Iran, having become very popular in the villages and tribal areas.

The state television service is directed by the Ministry of Information. The capital has government-run television

stations: National Television (NITV), Iranian Television (TVI) and a commercial station with educational programmes as well as an American Forces television studio (AFTV) running in English. In 1970 a TV station was opened in Shiraz, and others are to be opened in Isfahan, Abadan, Tabriz, Resht Ahwaz, Kermanshah and Meshed. France has been involved in equipping Iran's television stations.

At the beginning of 1971, there were estimated to be nearly 300,000 TV sets.

The government gives special importance to the development of radio and television as effective means of ideologically influencing the population and exercises strict control over their operation.

Despite the considerable increase in newspaper circulation and the broad use of radio and television, Iran lags behind greatly, say, Japan, in numbers per hundred inhabitants, as was shown by the following comparative figures compiled by the Iranian sociologist Shahpur Rassekh (1968):

	Iran	Japan
Newspapers, copies	1.5	42
Radio sets	6.7	19.6
TV sets	0.5	14.3

It must be supposed that as literacy spreads and the standard of living rises these indices will alter somewhat.

Publishing, Libraries and Museums

Comparison of the data on book production in 1937-1938 (219 titles) and in 1968-1969 (estimated at around 3,000) shows that it is very much on the increase, particularly since the sixties (Table 31). The increase has been overwhelmingly due to the publication of school textbooks (of which 32 million copies were printed in 1970-1971), popular and scientific literature. In recent years there has been a rapid increase in the publication of children's books, books for the semi-liter-

Table 31
Number of Titles and Subjects of Published Books

	1957-1958		1964-1965		1967-1968	
	Titles	Per cent	Titles	Per cent	Titles	Per cent
General problems	10	1.5	37	3.7	42	3.4
Philosophy	94*	13.7	53	5.4	64	5.2
Religion	58	8.5	96	9.7	25	10.2
Social sciences	—	—	106	10.8	113	9.2
Philology	—	—	41	4.2	52	4.2
Exact sciences }	64	9.3	53	5.4	67	5.5
Applied sciences }			68	6.9	104	8.4
Art	—	—	15	1.5	17	1.4
Literature	368**	53.8	422	42.9	536	43.5
Geography and history	90	13.2	94	9.5	111	9.0
Total	684	100.0	985	100.0	1,131	100.0

Source: *Iran Almanac, 1970*, pp. 584, 597; *Statistical Yearbook, 1968*, p. 422.

* Including books on the social sciences.

** Including translated literature and works on philology.

ate, and various textbooks and manuals for Literacy Corps schools. The average size of printings also rose.

Iran has some 130 publishing houses and 300 printing works, the biggest being concentrated in Teheran, Tabriz, Shiraz and Meshed. Their printing equipment is generally unsatisfactory, so that the quality of many publications is low.

All the universities and other higher educational establishments have libraries (60 major ones and 46 children's libraries). Staff for them are trained at the Teheran teacher training college. Libraries are being opened in medium-sized and small towns to serve the people studying in Literacy Corps schools.

In 1969 it was decided to found a national manuscript centre, in that connection an appeal was made to the owners

of ancient manuscripts to sell or donate them to the centre. Steps were being taken to organise a national bibliographical service that would record all publications issued in Iran.

The most important museums, all in Teheran, are the archaeological museum (founded in 1935); the ethnographic museum, which has, in particular, a very full collection of examples of the clothing worn in different areas and historical periods; the art museum, which exhibits, apart from painting and sculpture, mosaics and pottery, and other items of applied art; the Gulistan Palace, which exhibits monuments of the culture of the Kajar period, including a unique collection of carpets and jewels. In Teheran, too, is the museum, whose collection of gold and precious stones of all sorts includes one of the world's biggest diamonds, the *Dar-jai-Nor*. There are also interesting exhibits in the museums of other towns, like Isfahan (monuments of the Safawid era), and Shiraz.

More care has been taken of museums in recent years, as they are regarded as important sources of mass enlightenment (for that reason entrance to many is now free), and at the same time they are seen as centres for propagandising the "achievements" of the Iranian monarchy, promoting ideological conditioning of the population.

Health Service

The first attempt to create a state medical service in Iran was made in 1927, but a Ministry of Health was only set up in 1941. Its activity, moreover, had little effect for nearly two decades, especially in rural areas, where there was practically no medical aid. Even in 1962 only 900 out of 20,000 hospital beds were in rural areas, and only 300 out of 5,000 doctors worked there.

By the end of 1963 there were 1,558 polyclinics, 326 hospitals, 13 psychiatric hospitals, 32 medical centres, 640 first-aid stations, nine tuberculosis centres, two leproseries, 144

laboratories and 1,198 pharmacies in the country. Less than half of all medical institutions, however, came under the control of the Ministry of Health, the majority belonging to private individuals and companies, certain ministries, and to universities and other organisations. There was a complete absence of satisfactory information on the state of affairs in the localities.

Only at the beginning of the sixties did the authorities begin to take steps to improve the health service. Under the third five-year plan considerable resources were allocated for it. WHO consultants, including Soviet specialists, were brought in. In 1964 a special decree was issued setting up a Health Corps. "In order to develop the health service, medicine and general hygiene," the decree states, "we are creating a special corps that will comprise doctors who have finished medical school and licentiates with a diploma. This body will be called the 'Health Corps' and will be directed to work in villages and localities that have no medical attention of any sort."⁴⁷

The Corps was constructed on the same principle as the Literacy Corps—after completing a four-month programme of military training, doctors, sanitary engineers, pharmacists, and graduates of intermediate (secondary) medical institutions were posted to rural areas for 14 months to organise medical stations and improve living conditions. The stations were provided with the equipment and medicines needed to serve between 10,000 and 15,000 people. For every ten stations there was a supply centre, dental surgery, laboratory and sanitation department. In addition, mobile units were formed, consisting of a doctor (lieutenant), several assistants (sergeants) and a driver (private), to serve 30 to 35 villages and the area around them.⁴⁸ By 1971 the Corps had a strength of 2,445.⁴⁹

The Corps' first major trial was in 1965 during the outbreak of cholera in the vicinity of Resht, which affected 5-10 per cent of the population. More than three million were inoculated and the focus of the outbreak was quickly elimi-

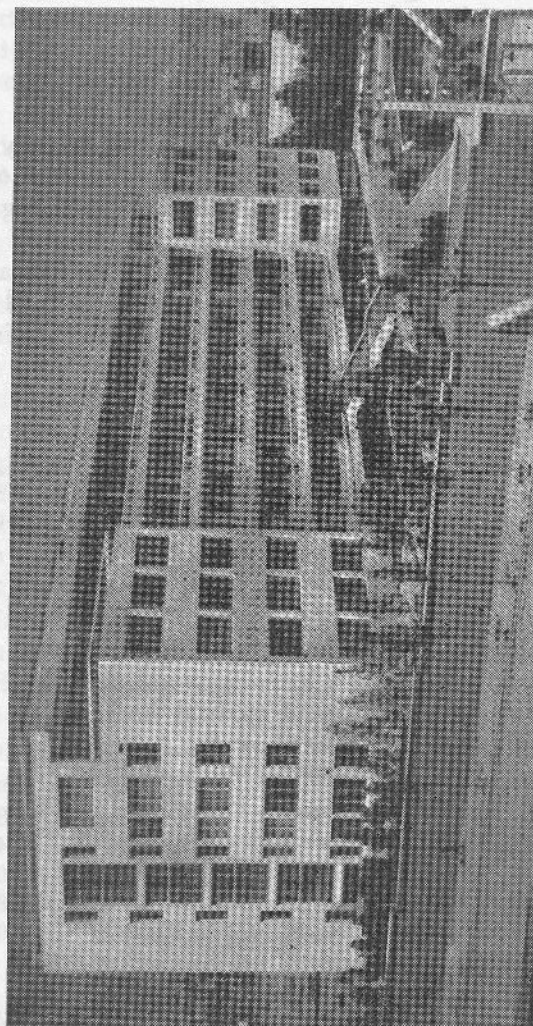
nated. Efforts to improve the water supply and sanitary conditions in rural areas were important moves in preventing this terrible disease. Members of the Corps working with the local people dug 4,000 wells, laid watermains in 27 villages, and repaired a thousand public baths.

The Corps had played an active part in combating malaria, which, through the energetic steps taken by the state and charitable organisations, and with the help of WHO, has been almost wiped out in the north of the country, though in the south, and in areas inhabited by nomadic tribes, many cases are still observed. The situation was complicated by the fact that the malarial mosquito had become immune to DDT in Iran, as has happened also in other countries, including Pakistan, Jordan, Iraq, Syria, Egypt and Tunisia.⁵⁰

In 1965 the WHO anti-malarial service began implementing measures to eliminate repeated outbreaks of the disease. Buffer zones were created along the nomads' trails and 11 field stations were set up to spray dwellings and to treat carriers (the medicine being mixed with cooking salt). Altogether nearly twelve million dollars a year was spent on this; by 1968 malaria had all but disappeared from Iran.⁵¹

There has been similar success in combating schistosomiasis, which is quite common in areas with artificial irrigation. A main role in this was played by the Institute of Parasitology and Tropical Hygiene, which has been guiding the work in Husistan since 1959. By 1967 the number of cases had been cut to 8,000.⁵²

Another serious problem requiring state intervention was that of the use of narcotics (opium, hashish and modifications of these). At the beginning of the fifties there were an estimated 1,500,000 drug addicts in Iran; but Iran was one of the first Middle Eastern countries to ban cultivation of the opium poppy,⁵³ and after 12 or 13 years experts reported a drop of 80 per cent in this number. In 1967, with WHO assistance, a specialised hospital was opened, the staff of which keep check on the condition of the patients on completion of the course of treatment too. It can now be said that the



The Hospital of the Alliance of Red Cross
and Red Crescent Societies of the USSR in Tehran

campaign against drug addiction has made definite progress. The illegal growing of opium does not meet the demand and strict customs control has reduced import of drugs to the minimum.⁵⁴ Compulsory treatment is also beginning to bear fruit.

By the end of the third five-year plan it was already possible to speak of definite advances in the development of the health service. The Ministry of Health had begun to organise councils in every province responsible for the work of local medical institutions and for medical services in the various districts. The Ministry has been given control of food production, the state of water supply, sewerage and drainage, and other elements of the sanitation service.

By that time, too, the number of hospital beds had risen to 31,000, distributed as follows:⁵⁵

	Number of beds	Per cent of total
State system	19,900	64.2
Charitable organisations	5,300	17.1
Social insurance schemes	3,000	9.7
Private sector	2,800	9.0

And 153 village medical centres and 950 hospital beds had been transferred to the Red Lion and Sun Society.

The numerical composition of medical workers had been altered, as the following figures show:⁵⁶

	1963	1968
Doctors	5,264	7,800
Dentists	1,000	1,400
Pharmacists	1,500	2,000
Nurses	1,500	2,800
Ancillary personnel	1,000	3,600
Sanitary officers	2	60
Sanitary engineers	20	60
Other specialists	515	1,283
Total	10,801	19,003

In 1972 there were 10,000 doctors and dentists and 14,000 nurses and ancillary personnel.

The fourth five-year plan envisaged further development of the health system, the more so that the statistics recorded a rather high percentage of gastric diseases (26 cases per 1,000 illnesses), eye infections, in particular trachoma (13.7 per 1,000)⁵⁷ and infant mortality (160 per 1,000 children under 12 months), and that sanitary conditions in the towns, and especially in the countryside, were not up to standard. The plan called for the building of 20 new medical centres, bringing of the number of hospital beds up to 45,500,⁵⁸ extension of the network of Health Corps stations, the opening of five new schools for nurses, ten colleges for training ancillary personnel (anaesthetists, radiologists, physiotherapists, etc.), three colleges for sanitary inspectors and one for sanitary engineers. Teaching establishments were to train 2,000 nurses, 700 ancillary staff, 50 sanitary engineers and about 1,600 workers with secondary medical education (laboratory assistants, technicians, etc.).

The health service pays great attention to preventive medicine. In 1969, in connection with the outbreak of small-pox in Pakistan, mass vaccination was carried out in the areas of Iran bordering on it. In the summer of that year nearly half a million people were vaccinated against cholera, and in the autumn a campaign against poliomyelitis began (vaccination of children). An innovatory measure with a prophylactic end was requirement that anyone registering a marriage, taking a job, or enrolling in an educational establishment must present a certificate from the local health centre that he or she was free from tuberculosis and venereal diseases.

The research centres—the Institute of Cancer Research and the Institute of Food and Nutrition founded in 1961 by Doctor Hedayat, an eminent Iranian specialist—have an important place in the health system. The Institute of Food and Nutrition, which has modern scientific equipment at its disposal, tests the quality of foodstuffs, carries out on-the-spot checks, especially in rural districts and overcrowded areas, to determine the nature and frequency of the main elemen-

tary illnesses and disorders caused by undernourishment (mainly in mothers and children).

The Teheran Institute of Cancer Research unites a research centre, hospital and refresher courses for oncologists. One of the most important problems on which it is working is to establish a method of early diagnosis of the commonest forms of cancer in Iran, e.g., cancer of the oesophagus. Specialists consider that the frequency of this cancer is due to certain features of the Iranian way of life: the drinking of very hot tea, and the chewing of *nass* (a mixture of tobacco, wood ash, vegetable oil, citrus fruits and water). A cancer prevention society functions under the auspices of the Institute of Cancer Research.

The Soviet Alliance of Red Cross and Red Crescent Societies has been giving much help to the Iranian health service. Every year, in its hospital in Teheran, which has been functioning there for more than 20 years, nearly 250,000 people are treated. Soviet surgeons have performed thousands of complex operations, including heart surgery. Working in constant contact with Iranian doctors and health workers they pass on their experience and transmit the latest advances in Soviet medicine.

Although Iran's population growth rate is somewhat lower than that of some Asian, African and Latin American countries, demographers still estimate that its population will reach 33 million by 1980.⁵⁹ In that connection a family planning programme was begun in 1966 under the auspices of the Ministry of Health, and within three years Iran had 354 birth control centres (45 in Teheran), and 358 mobile units serving the rural population. In 1969 330,000 people made use of their services.⁶⁰ Consultation and dispensing of contraceptives is free. It is to be expected that the health organisation's explanatory work and the rise in living standards and general literacy will soon be having a favourable effect on the country's demographic situation.

In noting certain changes in Iran's health system, one must admit that it still does not, on the whole, meet the needs of

the population. About 30 per cent of rural inhabitants still do not receive regular medical attention, and the number of hospital beds at 1.1 per thousand inhabitants is negligible. Treatment, with rare exceptions (i.e., the hospitals run by the social insurance system and the Red Lion and Sun Society) must be paid for, which makes it practically inaccessible to the greater part of the population.

In the second half of the nineteenth century a tendency was already noticeable toward a gradual transit from the feudal to the capitalist system of production. The programme of transformations carried out since 1963 (both those mentioned above and others outside the scope of this study) has done much to speed this process up. Along with other factors in the social and economic development of the country it is providing additional bases for speedier establishment of capitalist relations. During the implementation of these reforms capitalism has been consolidated at all levels, not only in the towns but also in the countryside, is dominating more and more new branches of the economy and infrastructure, and is becoming entrenched in all areas of social and political life. The period under study may be seen as a turning point in Iran's history. The transformations which the country is undergoing are radically uprooting feudal relations.

In education these transformations have led to the very rapid training of cadres, including specialists with higher education, for the developing capitalist industry, while those in the health service are enabling Iran to stamp out many diseases, that used to do great harm to the population, and to promote effective use of labour.

Iran, of course, has not built the harmonious society that its propaganda often asserts, but it is creating the basis for becoming an industrial-agrarian state in the next 20 to 30 years. In certain indices (standard of education and health, etc.), it has caught up with other Eastern states that it used to lag behind, and has even overtaken some of them.

The positive aspect of the social and economic reforms

is that during their introduction Iran re-examined the conceptions of its foreign policy and adopted the proposals of the Soviet Union and other socialist countries for friendly co-operation in economic and cultural affairs on the basis of peaceful coexistence between states with differing social systems.

¹ The position of women in Iran is quite eloquently illustrated by the following clause of the election law in force until 1963: "Not entitled to take part in elections are: women, fraudulent bankrupts, beggars, murderers, thieves..." Only in 1935 was there a decree abolishing the yashmak and permitting women to work in state and private institutions and to study in higher educational establishments.

² In his article "On Social Strategy in Developing Countries" Prof. S. Tyulpanov writes that "the extraordinary complexity of the transformations in Third World countries is determined not only by the absence (or very weak development) of vital forms of conscious (national or state) ties between members of society, but also by the social and psychological complex, and customs and ideas resulting from the centuries-old existence of a society extremely undynamic in its economic and social relations". (See: *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 7, 1970, p. 42.)

³ Iran's income from oil in 1970 was more than 2,000 million dollars, and its share of world extraction 8 per cent. The agreements signed in 1971 after a prolonged struggle between the oil-producing countries and Western oil companies envisaged a redistribution of income in favour of the producers.

⁴ Soviet scholars, while noting the positive significance of the reforms, stress their bourgeois limitations. See: M. S. Ivanov, *Noveishaya istoriya Irana* (Recent Iranian History), Moscow, 1965; S. Badi, *Rabochy klass Irana* (The Working Class of Iran), Moscow, 1965; A. I. Dyomin, *Selskoye khozyaistvo sovremennogo Irana* (The Agriculture of Present-Day Iran), Moscow, 1967; M. S. Ivanov, *Rabochy klass sovremennogo Irana* (The Working Class of Modern Iran), Moscow, 1970; and also articles by A. Z. Arabadzhan and S. Badi, among others, in collections and periodicals.

⁵ According to statistics, Iran's exports to the USSR and other socialist countries in 1968-1969 were more than 30 per cent higher than in 1967-1968.

⁶ Statements in the Iranian press were indicative. On April 18, 1967, the newspaper *Ettela'at* wrote, "The agreement, in opening a new chapter in relations between the two countries, provides for broad, effective and mutually beneficial co-operation in the extraction and

export of oil and natural gas, in the development of Iran's national industry, communications and irrigation and in the building of power stations, dams and elevators. The Soviet Union has agreed to help implement Iran's fourth five-year programme of development and improvement. This agreement is one of the most important in the series of economic and technological agreements over the period of relations between Iran and the Union of Soviet Socialist Republics, and its implementation will have immense significance for the development of Iranian industry and trade, and for the economic and social development of our country. Finally, this agreement will create conditions for further consolidation of relations. Our country is linked to the Soviet Union, a great world power, by common frontier stretching for hundreds of kilometres and by centuries of friendly and mutually beneficial co-operation... The Soviet Union, with its outstanding achievements and immense potential in different fields of science, technology and economics, and Iran, with its natural wealth and advantageous geographical situation, can satisfy many of each other's vital needs."

⁷ *Iran Almanac*, 1972, p. 519.

⁸ *Iran segodnya*, No. 3, July 1970, published by the Ministry of Information of Iran, p. 21.

⁹ Mohammed Reza Pahlevi, *La révolution blanche*, Paris, 1967, p. 115.

¹⁰ See: M. S. Ivanov, *Iran segodnya* (Iran Today), Moscow, 1969.

¹¹ *Iran Almanac*, 1972, p. 519; D. Ismailov, "The Founding and Work of the Literacy Corps in Iran", *Iran*, Moscow, 1971.

¹² *Iran segodnya*, No. 3, July 1970, p. 24.

¹³ In 1970 the government of Pakistan decided to create literacy units along Iranian lines. Venezuela is also employing Iran's experience—soldiers of the National Guard with the necessary training serve as teachers.

¹⁴ Dr. Mohammed Mohammadi, Dean of the Theological Faculty of Teheran University, declared in 1969 that the faculty's task was to train people to render service to the state as preachers of Shiism, teachers of religion in schools.

¹⁵ *Ettela'at*, June 9, 1963. There is a student organisation, the Religion Corps, composed of theological students who give lectures, and hold meetings on "Religion and the Aims of the Reforms", i.e., undertake ideological indoctrination in accordance with government instructions.

¹⁶ The government-controlled Iranian Women's Organisation actively works to spread education among women and to extend their rights.

¹⁷ According to official figures the percentage of literates reached 35 in 1968.

¹⁸ *Tehran Economist*, No. 859, October 24, 1970, p. 38.

¹⁹ *Iran*, 1971, p. 178.

²⁰ For more details see: Y. A. Doroshenko, *Sistema prosveshcheniya v Irane* (The System of Education in Iran), Moscow, 1959.

²¹ During the fourth five-year plan pre-school education developed mainly in the private sector, and the government's role was limited to the publication of methodological hand-books for teachers. As before, kindergartens were hardly accessible to peasants and the poorest strata of the urban population, though in some industrial regions (in Abadan, for instance) attempts are being made to open pre-school establishments attached to state enterprises.

²² In the very first year of the reform schools received, either free or at very low prices, about 8,500,000 copies of textbooks for the new programme.

²³ The elementary schools opened in tribal areas move around with the tribe. Since 1958 29,000 teachers for these schools have been trained in a special college, but the problem of educating the nomadic population is far from solved. Some details about the "white tents" (nomadic schools) can be found in A. Romanov, *Karavanniye tropy Irana* (The Caravan Trails of Iran), Moscow, 1969.

²⁴ *Iran Almanac*, 1970, p. 510.

²⁵ The propagandist nature of this measure is quite clear.

²⁶ In 1966/67 210 million rials was assigned from the Ministry of Defence budget in order to raise teachers' salaries.

²⁷ *Keihan*, March 4, 1968.

²⁸ In 1971-1972 Iran had 2,600 secondary schools (both state and private) with 1,134,000 pupils.

²⁹ *International Yearbook of Education*, 1969, Vol. XXXI, Geneva, 1970, pp. 74-75. There are councils for the education of children and adults in 52 areas of Iran (*Ettela'at*, October 6, 1970).

³⁰ *Ettela'at*, March 27, 1968.

³¹ According to some figures, industry and the service sector require 200,000 highly skilled workers and qualified administrative and management staff.

³² *Allgemeine Statistik des Auslandes Länderkurzberichte, Iran*, 1970. Stuttgart und Mainz, 1970, SS. 13-14. According to other data, there are 185 colleges with 23,335 pupils (*Iran Almanac*, 1971, p. 542), and by the close of 1971 their number had risen to 52,000.

³³ *4th National Development Plan 1968-1972*, Teheran, 1968, p. 269.

³⁴ The author owes his information on the involvement of other countries in the training of cadres to Y. A. Doroshenko, Cand. Sc. (Hist.).

³⁵ According to the plan, the figure for 1972 was 60,000.

³⁶ *Iran Almanac*, 1971, p. 549. On January 1, 1972, their number had reached 76,340, of whom 72 per cent (48,292) were studying in Teheran.

³⁷ Much is being done, too, to develop sports and physical education. Between 1968 and 1971 3,000 million rials were spent on building sports facilities, and an institute of physical education, which trains coaches in various forms of sport, has been opened.

³⁸ *Iran Almanac*, 1970, p. 515.

³⁹ *Talash*, No. 16, 1969.

⁴⁰ *Iran Almanac*, 1970, p. 515.

⁴¹ *Ettela'at* stated in May 1968 that between 1957 and 1965 58 per cent (3,802) of the Iranians who had studied in the USA remained there; see: M. S. Ivanov, *Iran segodnya* (Iran Today), p. 141.

⁴² On the social and economic strategy of neo-colonialism see the article by K. N. Brutents (*Kommunist*, No. 4, 1970).

⁴³ See: V. I. Gerasimovich, "On the Development of Scientific and Technological Research in Iran" in *Aktualniye problemy stran Blizhnego i Srednego Vostoka*, Moscow, 1970, p. 37.

⁴⁴ The Teheran Seismological Station registers around 300 underground shocks every year.

⁴⁵ Iran has concluded agreements on cultural and scientific co-operation with Pakistan and Turkey within the framework of the Regional Development Union founded in 1964.

⁴⁶ *Izvestiya*, March 22, 1971.

⁴⁷ Mohammed Reza Pahlevi, *The White Revolution*.

⁴⁸ There is interesting information on the work of the Health Corps in B. Izakov's *Puteshestviye s dvumya pasportami* (Journey with Two Passports), Moscow, 1968.

⁴⁹ *Iran Almanac*, 1971, p. 518. The Development Corps (around 6,000 members), which undertakes building work in agriculture and industry, was founded in 1965.

⁵⁰ *Men and Medicine in the Middle East*, Alexandria, 1967, p. 78.

⁵¹ Two and a half in every 1,000 cases of illness are malaria patients (see: *Iran Almanac*, 1969, p. 486).

⁵² In 1955 there were around 30,000. (See *The Work of WHO*, 1968, Geneva, 1969, p. 220).

⁵³ This crop used to be grown on 68,000 acres, and six million dollars worth of opium was exported every year.

⁵⁴ According to official figures, in 1968 the police confiscated 3,600 kilograms of opium, 36 kilograms of heroin and 13 kilograms of morphia. Under existing legislation cases concerning the distribution of narcotics are subject to trial by military tribunal.

⁵⁵ Of this number 7,500 beds were occupied by chronic cases of tuberculosis, leprosy, etc.

⁵⁶ *Iran Almanac*, 1970, p. 497.

⁵⁷ *Ibid.*, p. 498.

⁵⁸ In 1970 there were 35,000.

⁵⁹ See Y. N. Guzevaty, *Problemy narodonaseleniya stran Azii, Afriki i Latinskoj Ameriki* (The Population in Asia, Africa, and Latin America), Moscow, 1970, p. 79.

⁶⁰ *Iran Almanac*, 1970, p. 474. In 1970 the number of family planning clinics and centres reached 1,378.

INDIA

It is more than 25 years since India won her independence, years full of struggle by the progressive forces of Indian society to strengthen the country's sovereignty and economic independence, to abolish social inequalities and to achieve democratic transformations. Any unbiased researcher or observer must admit that this struggle has had distinct success.

India was the first Third World country to introduce planning into her economy, to create a powerful state sector, mainly in industry, and to carry out a partial agrarian reform that abolished such a harsh feudal survival as the zamindari system. Over this period production of coal has doubled, output of steel has increased fourfold, electric power production has gone up five times, production of oil products 70 times, and there has been considerable capital construction. Growth of industrial production reached 6 per cent in 1971 (2 per cent below the planned target). Certain advances have also been made in agriculture. In the year 1970-1971 agricultural production increased by 4.5 per cent.

India's policy of non-alignment with military blocs and her consistent opposition to colonialism and support for peace throughout the world have confirmed her international authority. Her position in the world market has also changed: almost half her exports now consist of so-called non-traditional goods.

Nevertheless these successes and advances are quite insufficient. Broad sections of the public are expressing discontent with the slow rates of economic growth (national income and per capita consumption are still almost the lowest in the world), and with the preservation and sometimes even intensification of social contrasts and property inequalities. India, probably more than any other country, has tenacious phenomena and institutions that retard her development—outmoded forms of ownership, especially in the countryside, the caste system, regionalism and religious prejudices.

The government's attempts to continue with the social and economic transformations led, at the end of the sixties, to the intensification of social and political conflict. "Today with the disintegration of the colonial empire of the capitalists in the main completed," as L. I. Brezhnev has stressed, "the former colonial world has entered a new stage: the struggle no longer solely for national but also—and this is now the main thing—for social liberation is today becoming more and more sharply pronounced."¹

The sharpening of the internal situation was brought about by the monopolistic bourgeoisie's attack on the state sector, and by their opposition and that of the large landowners to implementation of agrarian reform. The ruling party, the Indian National Congress, was threatened with loss of its hold on the masses. Sripad Amrit Dange, Chairman of the National Council of the Communist Party of India, gave this analysis of the situation:

"The alignment of class forces which brought about the sweeping unity of the people in the struggle for national freedom from foreign rule, does not and cannot continue after the achievement of independence when the problem of radical structural changes in the economy of the country comes to the forefront.

"Monopolists, bankers and speculators and similar sections of the bourgeoisie, which mushroom after the end of colonial rule, resist the new socio-economic reforms with all their might and strength. They ally with landlords, princes and

religious-feudal elements to suppress the new upsurge of the people which wants to move forward from national independence to social liberation. What is worse, they begin to enter into a growing collusion with imperialism, with foreign private capital, against the common people, even at the cost of mortgaging the newly-won independence of the country."²

In face of these difficulties Indira Gandhi's government has relied on the democratic forces and the support of the Left wing of the Indian National Congress in taking a number of important steps, namely, nationalising 14 large banks, passing a law to stop pension payments to ex-princes and strengthening the country's foreign trade position. Under the pressure of the peasant masses, demanding a just distribution of land, the government had to announce that it was preparing to complete agrarian reform.

In reply the forces of reaction made attempts to obstruct the implementation of progressive measures, sparing no efforts in forming a bloc of Right-wing parties to committing provocational terrorist acts in some areas. The government then took the step of calling parliamentary elections before expiry of its term; these took place in March 1971 and gave the Left a landslide victory.

"The recent nationalisation of the big banks in India, and the impressive victory scored over the Right-wing forces at the last elections to the House of the People of the Indian Parliament," said L. I. Brezhnev, "...is evidence that the masses of people in that country resolutely oppose the reactionary pro-imperialist forces, and stand for the implementation of a land reform and other socio-economic transformations, and for a policy of peace and friendship in international affairs."³ This course should also be promoted by the treaty concluded between India and the Soviet Union on extending mutually advantageous economic, scientific and technological co-operation.

* * *

The future development of India depends greatly on how consistently and successfully social and economic reforms and changes are carried out in the sphere of education, health, science and culture, though for such a large and complex country this is no simple task.

The democratic Republic of India consists of 19 states, nine union territories and other areas, each with the appropriate executive organs of power. Defence, foreign relations and finance are the jurisdiction of the central government.

India is inhabited by many nationalities, of which the main ones are Hindi, Bengali, Tamil, Marathi, Oriya, Telugu, Gujarati, Kannada, Malayalam, Punjabi and Assamese. There are 872 languages and dialects (according to the 1961 census) belonging to four linguistic families: Indo-Aryan, Dravidian, Munda and Tibeto-Chinese. The official languages are Hindi and English (for non-Hindi speaking states). The Constitution recognises, in addition, 14 regional languages: Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu, Urdu, Sindhi, Assamese, Kashmiri, and classical Sanskrit. The majority of the population (83.51 per cent) are Hindus in religion; of the rest 11 per cent are Moslems, 2.5 per cent Christians, 1.79 per cent Sikhs, 0.74 per cent Buddhists, and 0.46 per cent Jains.

On April 1, 1971, there were 546,900,000 people living in India. It is not only one of the largest countries in Asia and the world, but is also one of the youngest, 50 per cent of the population being under 18.⁴ Naturally, therefore, educational problems have special significance: by 1985 the numbers studying should reach 170 million.

Public Education

In the colonial period the school system was a copy of the English system. Supposing they would retain their supremacy for ever, the colonial authorities had already begun to tackle

the problem of training local cadres for the administrative apparatus in the first half of the nineteenth century.⁵ Their educational policy aimed at creating a stratum of literate natives, devoted to them, obedient executors of the will of the ruling powers. The English historian, Lord Macaulay, himself an important official under the Indian Governor General, clearly formulated these aims in 1835: "We must . . . do our best to form a class who may be interpreters between us and the millions whom we govern; a class of persons, Indians in blood and colour, but English in taste, in opinions, in morals and in intellect."⁶

In accordance with these principles, in the 1830s funds were assigned for education mainly for founding teaching establishments that would train officials for the colonial administration, clerks for commercial firms and medical workers.

The opening of three universities in 1857, in Bombay, Calcutta and Madras, laid the foundation of India's present-day system of higher education. In the nineteenth century these universities, which were modelled on London University, were exclusively teaching centres, and did not engage in research. Later Calcutta University took the lead and many talented Indian scholars and scientists were trained, and post-graduate work was undertaken. In the first quarter of the twentieth century several more universities were founded, including Benares University, where some subjects were taught in Hindi, the University of Mysore, and the University of Hyderabad, where lectures were given in Urdu. Higher education, however, was not greatly developed in the colonial period. The British authorities obstructed the founding of new institutions, preferring to send Indians to colleges and universities in Britain.

From the eighteen forties onward the colonial authorities attempted to extend their influence to elementary schools, especially to those where instruction was given in Indian languages. In addition the network of missionary schools also considerably expanded (they had around 300,000 pupils in 1883).⁷

Leading figures in the Indian liberation movement, like Swami Vivekananda, Bal Gangadhar Tilak and Rabindranath Tagore,⁸ and the many organisations striving for national resurgence, saw the free development of culture and the creation of a uniform system of education for the whole country as one of the ways of achieving their aims. Despite the results which the patriots achieved in their struggle to educate the people (Tables 32 and 33), a standard system was not created. For a number of reasons, historical, social and religious, each major region had evolved its own system, and these, though they had common features, nevertheless preserved fundamental differences. Even by the end of the colonial period universal elementary education had not been introduced.

India's political leaders have repeatedly stressed the need for a radical change in the organisation of education. Mahatma Gandhi, for instance, came forward with the proposal as early as 1937 to open Basic Schools. In his view the central element in education should be work for all children, irrespective of their social origin, caste or religious affiliation. "I am a firm believer," he wrote, "in the principle of free and compulsory primary education for India. I also hold that we shall realise this only by teaching the children a useful vocation and utilising it as a means for cultivating their mental, physical and spiritual faculties. . . . We have up to now concentrated on stuffing children's minds with all kinds of information. . . . Let us now cry a halt and concentrate on educating the child properly through manual work, not as a side activity, but as the prime means of intellectual training."⁹ He also had in mind that the production of saleable goods during vocational training would enable the schools to become self-supporting. The idea of "basic" education fully corresponded with his ideas of rejuvenating the countryside by raising productivity and increasing the self-sufficiency of agricultural production. In "basic" education, too, Gandhi saw a vital means of improving social relations. His proposals had a dual nature expressing, on the one hand, the require-

Table 32

Growth of Education in India (1881-1947)

Year	Population of the area covered by the Report	Total number of educational institutions	Boys	Girls	Total number of students enrolled
1881/82	202,604,080	114,112	2,517,629	126,349	2,643,978
1891/92	232,345,627	141,798	3,517,778	339,043	3,856,821
1901/02	240,435,451	147,708	4,077,430	444,470	4,521,900
1911/12	255,368,553	176,230	5,828,182	952,539	6,780,721
1921/22	247,097,651	208,120	6,962,928	1,418,422	8,381,350
1931/32	271,780,151	257,798	10,273,888	2,492,649	12,766,537
1936/37	271,797,753	255,715	11,007,681	3,138,357	14,146,038
1941/42	296,456,845	228,059	13,983,913	4,009,274	15,993,187
1946/47	296,456,845	218,171	13,948,999	4,297,785	18,246,784

Source: *The Indian Yearbook of Education, 1961*, Part 1, New Delhi, 1965, p. 332.

Table 33

Number of Educational Institutions Classified by Type (1881-1947)

Year	Primary Schools	Secondary Schools	Universities	Engineering and Technical Colleges	Other Colleges	Technical Schools	Other Schools	Total	Unrecognised Institutions*
1881/82	84,740	3,916	3	—	122	—	108	88,889	25,293
1891/92	97,409	4,872	5	4	137	—	554	102,681	39,117
1901/02	97,854	5,493	5	4	187	115	969	104,627	43,081
1911/12	123,578	6,370	5	4	182	256	5,942	136,337	39,893
1921/22	160,070	8,987	14	5	226	292	3,719	173,313	34,807
1931/32	201,470	13,747	16	7	310	494	6,766	222,810	37,988
1941/42	181,968	15,203	15	9	422	670	11,633	209,920	18,139
1946/47	172,661	18,146	17	16	620	665	11,754	203,879	14,992

Source: *The Indian Yearbook of Education, 1961*, Part 1, New Delhi, 1965, p. 333.

* Private institutions with non-standard curricula, whose leaving certificate was not regarded as valid.

ment that the school be brought closer to life, which corresponded with the leading educational ideas of the time (the polytechnical school in the USSR, and instruction through activity in the USA) and, on the other hand, idealising traditional village culture (which in his view did not need reforming but strengthening), which introduced into his agitation for a new system of education a tinge of hostility to every kind of change, movement and development.

At the All-India Educational Conference in Wardha, also in 1937, attended by such leading figures of the national liberation movement as Dr. Zahir Hussein, the principles for reform of school education were worked out. The main aims of the Wardha programme were the introduction of universal eight-year education, instruction in the native tongues, and the teaching of manual labour and trades. The compulsory school course was to have two stages: primary (for children from six to eleven) and higher primary (from eleven to fourteen). There were to be two types of secondary school: the academic school, designed to prepare pupils for matriculation, and the vocational school. Secondary education was to last six years, including the three years of higher primary. An important point in the programme was the demand for the Indian National Congress Party to provide equal opportunities of education for all children, in particular for the children of Untouchables and for girls,¹⁰ which aroused discontent among many members of the ruling party.

Jawaharlal Nehru paid serious attention to the problem of education. In his opening speech to the All-India Educational Conference in 1948 he said: "Whenever conferences were called in the past to form a plan for education in India, the tendency as a rule was to maintain the existing system with slight modifications. This must not happen now. Great changes have taken place in the country and the educational system must keep pace with them. The entire basis of education must be revolutionised."¹¹

The 1950 Constitution of independent India expressed in legislative form what the country's progressive people had been

striving for for decades: the right to education. "The State shall endeavour," runs the Constitution, "to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years."¹² It was, however, an extremely difficult task to fulfil, especially as growth of literacy lagged considerably behind population increase. Census figures show that 7 per cent of the population were literate in 1921, 9.3 in 1931, 16.6 in 1951, 24 in 1961 and 29.4 per cent in 1971. The level of literacy varies from 60.2 per cent in Kerala to about 20 per cent in Bihar and 18.8 per cent in Rajasthan.

The law on compulsory elementary education, adopted by the majority of provinces in the colonial period, has not in fact yet been implemented in any of the states today. Far fewer village children attend school than those in the towns, though the gap is gradually being bridged.

Over these 25 odd years the educational system has in fact only been slightly extended, and the content and methods of teaching have barely changed. It was only in 1967 that work began on preparing educational reform, but it is still difficult to say when it will be completed.

A government commission, which worked for more than two years and incidentally studied the experience of Soviet schools and their curricula and textbooks in detail,¹³ published recommendations that formed the basis of the section on education in the fourth five-year plan (1969-1974). The basic task was to bring school curricula into line with the country's needs for cadres in the modern sense of the term (bearing in mind the need to pay more attention to natural science subjects and mathematics), to stimulate the development of educational theory and to improve textbooks.

Pre-school education, primary and secondary schools. The general scheme of Indian primary and secondary education consists of the following: the lowest stage catering for children from three to six is pre-school education; then comes primary or elementary education for children from six to

eleven, comprising primary and junior basic schools; this is followed by secondary schools, which are of two types—middle and senior basic for the 11-14 age-group, and high schools for children from 11 to 16. Some states have higher secondary schools with pupils from 11 to 17.

The next stage consists of intermediate colleges or intermediate classes in colleges. Their graduates enter either a two-year advanced college or a three-year specialised college, i.e., a higher educational establishment. Graduates of advanced colleges sit the examinations for a Bachelor's degree.

A partial reorganisation of intermediate colleges is being undertaken at the time of writing in accordance with the recommendations of a government commission; the syllabus of their first year will be taught in 11-year secondary school, so that their second year will now become their first.

The overwhelming majority of pre-school establishments belong to the private sector,¹⁴ and are almost all in the towns,¹⁵ thus being available to very few people (Table 34).

Table 34

The Development of Pre-school Education
(1950-1965)

Year	Institutions	Children	Teachers
1950/51	303	21,640	866
1955/56	630	45,828	1,880
1960/61	1,909	121,184	4,007
1962/63	2,502	164,595	5,221
1964/65	2,898	234,268	6,352

Source: *India, 1968*, p. 63.

These institutions are mainly the concern of local authorities, and government finance is not provided for these purposes. But in areas where state industrial construction is under way, kindergartens and crèches are being provided for workers' children, and some schools have preparatory groups

for children of pre-school age with lessons following a special programme. There are very few however.

A paradoxical situation has developed in India's educational system. Higher education is most developed, while elementary education is in the worst condition. The preliminary projects for introducing free compulsory education for children up to the age of 14 should have been completed by 1960, but in 1968/69 only 63 per cent of this age-group attended school (78 per cent of the 6-11 group and 34 per cent of the 11-14 group); the figures for girls were much lower: 59 and 20 per cent for each group respectively.¹⁶ (See Table 35.) Even by the most modest estimates 100 per cent of children up to 11 can only possibly be taken into elementary education by 1976, and only by 1985 could all children up to the age of 14 be attending school.

Table 35

Expansion of Elementary Education (age 6-11; classes 1st-5th)

Pupils	1946/47 (000,000s)	1960/61		1965/66		1968/69		1973/74	
		Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group
Total	14.11	34.99	62.4	50.47	76.7	55.49	77.3	68.58	85.3
Boys	—	23.59	82.6	32.18	96.3	34.92	95.2	41.25	99.6
Girls	—	11.4	41.4	18.29	56.5	20.57	58.5	27.33	70.1

Source: *Fourth Five-Year Plan, 1969-1974*, p. 355.

Since independence there has been democratisation of elementary education which is reflected by a decrease in the number of private schools, its most conservative element (Table 36). This has special significance for the Indian situation since it helps to break down caste barriers.

Table 36

Elementary Schools (according to ownership or control)

Year	Government control	District control	Municipal control	Private		Total
				subsidised	unsubsidised	
1901/02	3,832	16,559		59,213	18,250	97,854
1916/17	1,353	39,172		85,353	16,325	142,203
1936/37	2,666	65,697	6,666	110,030	12,168	197,227
1946/47		no information				172,661
1949/50	49,602	78,834	7,990	62,561	5,839	204,826
1954/55	59,262	123,863	9,157	67,452	3,892	263,626
1959/60	70,533	168,638	9,217	66,657	4,025	319,070
1960/61	73,599	175,534	9,291	69,202	4,048	331,674

Source: *The Indian Yearbook of Education, 1964*, Second Yearbook, New Delhi, 1964, pp. 633-35.

The private schools, modelled on the lines of the English Public School, are a direct copy of the old colonial schools, in which pupils are deprived of the possibility of learning much about the history and culture of their native land. Their academic standards are very low (teachers are not protected by contract and do not receive old-age pensions) and the pupils pay fees. The percentage of private schools subsidised by the government and private individuals is, moreover, still quite high.

State schools at this level are free. Instruction is given in the native language, or, in regions inhabited by people of various nationalities, in the regional language.

There has been a broad reorganisation of primary schools into basic ones, a process guided by the National Institute of Basic Education, which was founded in 1956. Its job is to train administrative and teaching staff for Basic Schools. The Institute is a constituent member of the National Council of Educational Research and Training, founded in 1962, which comes under the federal government and co-ordinates work within this system in all the states of India.

Mahatma Gandhi's proposals, which serve as the basis of the government's educational policy, have undergone noticeable changes over the past 30 years or so. As might have been expected, the idea of self-sufficiency for primary schools proved short-lived, and the very principle of "the acquisition of knowledge through the teaching of trades" has also undergone thorough re-examination. In India's third five-year plan the vital task in education was formulated as the adoption of common programmes in basic and non-basic schools, the development in pupils of the simplest habits of life in the collective, the implementation of a cultural programme and a programme of entertainments. In the "reformed" Basic School the most important element remains the education of children from an early age in the spirit of caste toleration.

In accordance with the unified curriculum adopted for all India, the following subjects are taught in Basic School: weaving, agriculture, fishing, book-binding, joinery and car-

penry, metalwork, pottery, shoemaking and leather-work, domestic science, Hindi, the native language, mathematics, social science, general nature study (physics, chemistry and biology) and art.

The reorganisation envisaged the building of schools near children's homes, the enrolment of every child of the appropriate age in the first class, and completion of the course of education as established by law. In almost every state of India villages with a population of more than 300 now each have a primary school, but the actual age of the children studying in the first class still remains a serious problem. In industrially developed countries 95-97 per cent are children who have just reached school age, but in India in the sixties there were only about 45 per cent, and quite a high proportion of first classes consisted of adolescents. The education commission was forced to admit in its analysis of the age composition of first classes over 50 years (1911/12-1961/62) that little had changed in that time.¹⁷ The following are the relevant data (per cent):

	1911/12	1950/51	1961/62
Under 5	4.6	1.4	1.0
5-6	20.6	19.9	18.4
6-7	24.6	32.1	31.7
7-8	21.2	21.5	25.7
8-9	11.8	12.7	12.5
9-10	7.4	6.5	6.0
10-11	4.3	3.5	3.0
11-12	2.6	1.5	1.1
Over 12	2.9	0.9	0.6

There would seem to be many reasons for this. Parents often simply cannot determine the child's age accurately, and there is a tendency, moreover, in drawing up lists to enter children of differing ages. The considerable migration among the poorest strata of a number of areas (West Bengal, Tamil Nadu, etc.) prevents an exact count of school-age children.

An annual census of children of school age and of those who should be entering the first class the next year will contribute to lessening the number of children who do not attend school and to eliminating the age-divergence of children in the first class.

The weak link in India's educational system is secondary education, both complete and incomplete, though the number of pupils is growing steadily (Tables 37 and 38). In the fourth five-year plan it was expected to enrol 3,100,000 additional pupils in the ninth, tenth, and eleventh classes.¹⁸ There is, however, a tendency, due to unemployment, for the development of secondary education to be retarded. Mere quantitative changes, moreover, cannot solve the problem of the training of specialists with secondary education; qualitative adjustments are needed. The "academic" school, which grew up in the colonial period, is surprisingly tenacious, evidence that Indian society has not undergone deep-going social reconstruction.

Table 37

Expansion of Incomplete Secondary
Education (age 11-14; classes 6th-8th)

Pupils	1960/61		1965/66		1968/69		1973/74	
	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group
Total	6.7	22.5	10.53	30.9	12.27	32.3	18.1	41.3
Boys	5.07	33.2	7.68	44.2	8.76	45.4	12.19	54.3
Girls	1.63	11.3	2.85	17.0	3.51	18.8	5.91	27.3

Source: *Fourth Five-Year Plan, 1969-1974*, p. 355.

The need to convert schools from preparatory departments for would-be entrants to higher education into establishments training specialists for work in the economy determined the development of the so-called multi-profile schools, whose

Table 38

Expansion of Secondary Education (age 14-17; classes 9th-11th)

Pupils	1965/66		1968/69		1973/74	
	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group	Enrolment (000,000s)	Percentage of age group
Total	5.28	17.0	6.58	19.3	9.69	24.2
Boys	4.08	25.6	4.95	28.5	7.00	34.3
Girls	1.20	7.9	1.63	9.8	2.69	13.7

Source: *Fourth Five-Year Plan 1969-1974*, p. 356. ¶

pupils take the full course of the general school but also learn agriculture, crafts, office work, etc. Lack of the necessary resources, equipment and teaching personnel, however, and, to a certain extent, the traditional scorn of physical labour, especially among the upper castes, retard reorganisation and make these schools unpopular. There were only 6,128 of them in the sixties (out of 24,017 secondary schools), and they only had 540,000 pupils.

The main requirement of the fourth five-year plan in secondary education was to improve teaching standards. Their low level means that a significant percentage (in some cases up to 40 per cent) do not pass the matriculation examinations. This applies particularly to the private schools, of which there are still many. Government control of the standard of teaching in them and of its aims is extremely limited, although they usually receive a state grant in some form or other. It may be assumed that the reasons for it are to be found both in the state's financial difficulties and in the opposition of certain conservative circles (caste groups, etc.) who fear that nationalised schools would reduce their hold on the younger generation.

Teaching in the secondary schools is mainly in the national languages, but English plays a great role. In accordance with the amendment to the 1967 Language Act, the Indian government proposed drawing up a programme for develop-

ing Hindi alongside the other important regional languages defined by the Constitution, and the introduction of the Three-Language Formula. In states where Hindi is not spoken schools must teach three languages: the national language, Hindi and English.

This would seem to be the best solution of the problem at the moment, although it gives rise to additional difficulties and demands considerable effort from the already overburdened schoolchild. As a rule, pupils in most areas do not know three languages.¹⁹

It must be noted in passing that the development of Hindi, and its use in scientific and technical literature is retarded by the absence of a co-ordinating centre and by the lack of funds for this programme, especially in the states of the south. The need to give special training to teachers of senior classes also gives rise to great difficulties.

It must also be said that standards of English have fallen sharply over the past 20 odd years, which has complicated the teaching of a number of subjects in higher education and has made the assimilation of scientific and technical literature more difficult. And the standard of school instruction has also deteriorated, owing to the lack of qualified teaching staff. The conference of university principals, held in April 1970, decided to use the regional languages for instruction at all levels. India's Minister of Education, Dr. Vijendra Rao, warned, however, that in considering the continued use of English, political or emotional factors should be disregarded as English had become, through historical conditions, the sole language through which students could receive maximum information. Even if the regional language was to be the language of instruction, students would still need to use literature in English in order to perfect their knowledge. And he stressed that they did not have the necessary books in the regional languages and would hardly be likely to produce them in the near future.

A programme of compulsory physical education has been introduced in higher primary and secondary schools in nearly



At a PT lesson in a Bhilai secondary school

every state since 1965/66. Within two years some six million children were already involved. The Education Commission, while noting this remarkable success, pointed out that schools were not paying due attention to the development of such qualities as team spirit and discipline. Physical education lessons, however, acquainted the children with the basic rules of sanitation and hygiene, a fact of immense importance for the struggle to improve living conditions, especially in rural localities.

The fourth five-year plan set, as vital educational tasks, the creation of suitable conditions for the teaching of girls and also of children in backward areas and communities. Measures to develop female education had already been envisaged by the first plan. In the 20 years since then the number of girl pupils has grown noticeably, but there is still a great difference in school attendance by girls and by boys (Table 39), which shows that social changes are proceeding very slowly in India and that the campaign against religious



Students of a women's school in Agra

and caste prejudices is inadequate. Special programmes are to be drawn up to close the gap, programmes which have to take into account the features of the state in which they are to operate.

Education of the lowest castes (60 million people) and the backward tribes²⁰ (which number almost 40 million) is an extremely acute problem. They are spread over the whole country, and are behind the majority of the people in level of social development. Literacy among them (8.53 per cent) is much lower than the average for all India; and in the central and southern tribal belts it is lower than in the northern and eastern belts. There are especially few literate women, barely 3 per cent. Additional complications, compared with the rest of India, linked with the organisation of schools, attendance, the language problem for teachers, the absence of textbooks in the tribal languages, and often the lack of a written language, and the shortage of funds for social and cultural measures, make it difficult to carry out these aims.

Table 39

Expansion of Girls' Education

Year	Classes 1st-5th			Classes 6th-8th			Classes 9th-11th		
	Total number of pupils (000,000s)	Girls		Total number of pupils (000,000s)	Girls		Total number of pupils (000,000s)	Girls	
		(000,000s)	per cent		(000,000s)	per cent		(000,000s)	per cent
1950/51	19.15	5.38	28.1	3.12	0.53	17.0	1.26	0.17	13.5
1960/61	34.99	11.4	32.6	6.7	1.63	24.3	3.03	0.56	18.6
1965/66	50.47	18.29	36.2	10.53	2.85	27.1	5.28	1.20	22.7
1968/69	55.48	20.56	37.1	12.27	3.51	28.6	6.58	1.63	24.8
1973/74	68.58	27.33	39.9	18.10	5.91	32.7	9.69	2.69	27.8

Source: *Fourth Five-Year Plan, 1966-1974*, p. 357.

The development of universal education is closely linked with adult education, to which the Government of the Republic of India has not paid enough attention, though it has proclaimed the need to educate illiterates. The programme of so-called social education, adopted in the first years following independence, i.e., the eradication of illiteracy, acquaintance with the rules of hygiene and health protection, the inculcation of the work habits needed to improve the material situation, the development of civic pride, and help for citizens in realising their rights and obligations, etc., has not been satisfactorily fulfilled.

Adult education classes and training centres were started only in certain big industrial towns (and in insignificant numbers), although the main mass of the population live in rural areas. The majority of the teachers in these schools and centres worked without pay as the funds needed were not made available for this purpose. Attempts were made to encourage schoolchildren to teach their parents; prizes were awarded to the best "teachers" among the children,²¹ but such measures did not yield tangible results, and the problem

was not in fact solved. Over the past decade, moreover, the absolute number of illiterates actually rose to 380 million, a fact that took the Indian authorities by surprise and naturally caused uneasiness since the number of pupils in primary schools had been constantly growing: there was thus a threat to the carrying out of the intended economic transformations.

The fourth five-year plan unfortunately did not envisage anything realistic in this area, and most of the work in promoting functional literacy has been left to private and charitable organisations. The programme for instructing farmers was supposedly to cater for only around a million people, although it was intended in connection with the extension of the television network to set up new adult education centres after 1972-1973.²²

The first All-India Conference of Functional Literacy, held in Calcutta in September 1969, and attended by officials from state education departments, pro-rectors of universities, eminent public figures (including Krishna Menon, Sukumar Sen and Aruna Asaf Ali), and representatives of UNESCO and the World Federation of Trade Unions, emphasised that, despite the considerable overall increase in allocations for education, expenditure on social education had only gone up 50 per cent, and was a mere 0.2 per cent of the total education budget.

The resolution adopted by the conference recommended the formation of teams of volunteer teachers with the aim of eradicating illiteracy in town and country, and the education of workers at their place of work (the additional expenses to be borne by the owners, and partly by the trade unions and the workers themselves). The conference declared that from 1979 the right to vote in elections should be extended only to literate constituents, so as to do away forever with the shameful practice of fingerprinting voters instead of their signing the ballot papers.

Despite the definite progress that has been made in developing education and in school building in independent India,

there are still no grounds for regarding the situation as satisfactory. Above all, one cannot, in any way, regard the material and technical basis of schools as satisfactory. There is an acute need everywhere, and especially in rural areas, of school buildings and classrooms (lessons are sometimes held in the open air, under trees, and occasionally in premises not suitable for the purpose); at the same time there is a lack of necessary equipment, of blackboards, slates, exercise books and textbooks.

Until recently the publication of textbooks depended on private initiative, but now the Ministries of Education of the states have taken on responsibility for this. Some states have so far only issued textbooks for primary schools, others are already catering for secondary schools. The National Council of Educational Research and Training has a programme for publishing model textbooks in fifteen subjects for secondary and vocational schools, and has been instrumental in the publication of several books for extra-curricular reading on the culture and historical figures of India. The central government looked into the question of using foreign textbooks (from Britain, the USA and the USSR) in Indian schools and came to a positive decision. Now children in a number of states study chemistry, physics and biology from Soviet textbooks translated into their national languages.

The rapid growth in numbers of pupils, in itself a positive factor, has seriously complicated the problem of teaching cadres. In 1950 there was one teacher to every 34 pupils (on the registers), in 1960 to every 44, and in 1970 to more than 50.²³ To cope with this situation the educational authorities were forced to lower their requirements as regards teachers' qualifications.²⁴ The practice of holding summer training courses (Summer Institute) for school and college teachers has yielded undoubted benefit, but their possibilities for a country like India are extremely limited.

The very difficult economic position of the people in India, particularly that of the rural population, continues to be a serious obstacle to development of the school system. The



An evening school in Mysore

employment of children in field work takes them away from their studies and has a negative effect on school attendance. The Government Education Commission mentioned above noted in its report that the backwardness of the school is the result in many ways of unsolved social and economic problems. The White Book of Tamil Nadu, cited by the commission, also pointed to poverty as a basic cause. A third of the state's parents, the White Book said, could not care less whether or not their children went to school, and they were sometimes hostile towards school: they had to spend out on a uniform and textbooks, not to mention the fact that the child could be at home helping.

The poverty of the majority of Indian families forces the government, with the support of a number of international and national private organisations, to endeavour to provide

a system of school meals and in some areas to give children free breakfasts.

State aid is also expressed in the increased sums available for scholarships and other financial grants and allowances. In 1965-1966 this sum had risen by 420 million rupees on the previous year, and help was given to two million pupils. Scholarships are granted by the central government, by the state governments, by local authorities, private organisations and individuals, and by the school authorities. It was decided in principle that the central government would provide funds for this purpose to higher educational institutions, and state governments to schools. In 1966-1967 more than 100,000 scholarships and grants were paid to members of the lower castes and backward tribes, and 7,000 to gifted pupils who wished to continue their education. Since 1970 fifty annual scholarships have been made available for students being sent to study abroad, and 1,250 awards are made to students who do the most valuable work on the history of Indian culture.

In some states education in incomplete and complete secondary schools is free, namely in Andhra Pradesh, Bihar (for girls only), Kerala, Madhya Pradesh, Mysore, Nagaland, Orissa (for girls), Tamil Nadu, Uttar Pradesh (for girls). This is a great achievement by independent India, and its results will bear great fruit in the near future.

Higher and vocational education. India's system of higher education consists of universities, colleges (some of which belong to the universities), and institutes of various bias, status and affiliation. As a result of the government's energetic measures the number of higher educational institutions has increased significantly since independence (Table 40).

As of January 1, 1972, India had 84 universities, ten institutes of university status, and nine institutes of national importance. In 1970-1971 there were 3,112,404 registered students, of whom 689,086 (22.1 per cent) were women.²⁵

Higher educational establishments are unevenly distributed among Indian states and territories.²⁶ According to the

figures for 1967 there were 12,298 students in Delhi per million inhabitants, 1,920 per million in Orissa, 7,008 in Kerala, 2,367 in Rajasthan, 4,323 in Mysore, 2,991 in Bihar and 3,747 in Tamil Nadu.

The higher education system is rather ponderous in structure, and does not fully correspond to modern conditions and the needs of development. At present the universities fall into three types:

affiliating universities, which establish curricula, take examinations and award degrees to graduates of the colleges under their control;

universities that are purely teaching institutions;

Table 40

Expansion of Higher Education in India
(1950-1971)

Institutions	1950/51	1955/56	1960/61	1965/66	1970/71
Universities	27	33	45	64	84
Institutes of university status	—	—	2	9	10
Colleges, by type					
social and natural sciences and commerce	548	783	1,161	2,002	2,882*
engineering and technical	31	49	76	103	107
medical	34	51	80	123	176**
agricultural	16	24	37	54	57
veterinary	7	14	18	20	23
law	22	27	40	70	91
teacher training	36	75	125	193	258
physical education	1	2	5	7	10
Total	722	1,058	1,589	2,645	4,598

Source: *India. Pocket Book of University Education*, 1972, p. 87.

* Including colleges of Oriental studies (226), music and fine art (89).

** Including colleges of modern medicine (105), traditional Indian medicine (48), pharmacy (5) and nursing (9).



Bombay University

mixed universities (the majority), which exercise both organisational and academic control over their constituent colleges.

There were 206 university colleges in 1970/71, the remainder being either government colleges (684) or private foundations (2,714).²⁷

University education in India is controlled by the University Grants Commission, set up by Act of Parliament in 1956. The commission reviews university finance and the organisation of study programmes and research, deals with controversial issues connected with the granting of degrees, and advises the government on the opening of new institutions.

In 1970 the commission was partially reorganised with the aim of increasing its role in the management of university education and its responsibility for drawing up curricula and promoting scientific work in the institutions for which it is responsible.²⁸

Table 4

Enrolment in Universities and Colleges by Faculties

Year	Total enrolment	Arts	Natural sciences	Commerce	Pedagogics	Engineering & technology
1950/51	396,745	182,005 (45.9*)	127,168 (32.1)	34,067 (8.6)	4,135 (1.0)	12,094 (3.0)
1960/61	1,049,864	486,228	302,770	90,214	19,005	45,389
1965/66	1,728,733	706,641	565,254	165,283	33,546	85,555
1970/71	3,112,404	1,289,345 (41.4*)	1,034,563 (33.2)	311,240 (10.0)	71,585 (2.3)	105,821 (3.4)

Table 41 (continued)

Year	Total enrolment	Medicine	Agriculture	Veterinary	Law	Others
1950/51	396,745	15,260 (3.9)	4,744 (1.2)	1,101 (0.3)	13,649 (3.4)	2,522 (0.6)
1960/61	1,049,864	35,215	27,584	5,385	27,251	10,893
1965/66	1,728,733	70,088	51,190	6,257	37,318	7,641
1970/71	3,112,404	133,833 (4.3)	87,147 (2.8)	11,240 (0.4)	59,135 (1.9)	8,096 (0.3)

Source: *India. Pocket Book of University Education, 1972*, pp. 112-13.

* The figures in brackets represent the percentage of the total number of students.

By the tradition handed down from the colonial period, the universities of India, as indeed the higher educational institutions of most Eastern countries, gave education mainly in the humanities. Springing from the general needs of exploiting the enslaved country, the colonial educational system, which, as has already been said, was designed to train officials from the propertied classes for the colonial bureaucracy, not only did not promote development of the natural and technical sciences but even slowed it down. The British authorities, interested in keeping India backward, obstructed the formation of cadres who could have passed this knowledge on to the people, and hindered the evolution of a tradition

of scientific thinking. The training of specialists in science and engineering, moreover (as we have also remarked), calls for heavy expenditure, which the British rulers were not prepared to spend on the education of Indians.

It must be said that the national government, too, finds it very difficult to produce anything like the resources needed to found scientific and engineering institutions of modern standard, and the situation has not really changed much in the years of independence. As before graduates in the humanities are preferred to those in scientific or technical subjects (Table 41), which does not really meet the needs of a young developing country. The increase in the numbers of students in teacher training, medical and agricultural colleges is obviously inadequate.²⁹

The disproportion is fading slowly, and its disappearance is retarded, among other things, by the low remuneration of graduates in these fields and by lingering caste prejudices. Another factor is that most colleges are in private hands which prevents the government from controlling the intake of students by subject.

A most serious problem facing Indian universities is that of academic standards. The rapid development of science and the need to extend the experimental base are making higher demands on curricula and teaching standards. Poor equipment and shortage of qualified teaching staff, moreover, make for differences in the standard of teaching in the various institutions. The authorities have practically no way of checking the state of affairs and of orienting the teaching in private colleges. The Education Commission's 1966 report suggested taking discriminatory measures against those colleges where the standard of teaching was below average.

The reorganisation of university education is unfortunately proceeding extremely slowly and, as a consequence, there is a certain lag in the development of science, and young graduates arriving at research institutions are not always as well trained as they should be.

It would, however, be unfair to ignore the significant rise in the scientific standard of the country's leading universities, Delhi, Calcutta, Madras, Bombay, Benares and Bangalore, which have such world-famous professors, Indian scientists who have founded scientific schools in various fields, as Megnath Saha, Homi Bhabha, Nobel Prize winner Chandrasekar Raman, Prasanta Mahalanobis, M. Sahani, H. Santanu, T. Sansadri, Atma Ram, Satendranat Bose, Calyampudi Rao and Dr. Vijendra Rao.

The problem of training engineering cadres arose with extreme urgency in India immediately after the winning of political independence. One of the independent government's first acts was the setting up, in 1949, of the All-India Council for Technical Education; and the problem was given considerable attention in the first and second five-year plans.

In accordance with the decision already adopted in 1946 to build four basic technological institutes, one each in the east, west, north and south of the country, the Indian Institute of Technology was founded in Kharagpur in 1951. It has several thousand students and 300 to 400 post-graduates, and trains engineers in various fields, in particular shipbuilding, internal combustion engines, geophysics, etc. Later similar institutes were opened in Bombay (1958),³⁰ Madras (1959) and Kanpur (1960). They were declared State Institutes by Act of Parliament, and are responsible, among other things, for the retraining of engineering cadres and for conducting research in a number of technological subjects.

The third five-year plan envisaged the founding of 23 institutes and 94 polytechnics, and in fact 21 institutes, 77 polytechnics, and 18 women's polytechnics were built. Since 1963 a big institute has been functioning in New Delhi, which has been given the status of the Indian Institute of Technology. Four other institutes for raising the qualifications of teachers for polytechnics were founded in Madras, Bhopal, Calcutta and Chandigarh. In recent years institutes training managers have begun functioning in Calcutta and Ahmadabad, and in ten higher educational establishments manage-

ment faculties have opened. Thus, by the end of the sixties, there had been a marked increase in the number of higher and secondary technical institutions (Table 42).

Table 42

Higher Technical Education
(Engineering and Technology)

Year	Institutions	Sanctioned Intake	Graduates	Polytechnics	Sanctioned Intake	Graduates
1947/48	38	2,940	1,270	53	3,670	1,440
1950/51	49	4,120	2,200	86	5,900	2,480
1951/52	53	4,790	2,690	89	6,220	2,630
1955/56	65	5,890	4,020	114	10,480	4,500
1956/57	71	6,610	4,340	109	10,320	4,100
1960/61	102	13,820	5,700	195	25,800	7,970
1961/62	111	15,690	7,030	210	27,690	10,970
1963/64	118	20,744	9,120	248	37,822	12,938
1965/66	133	24,695	10,282	274	48,048	17,699
1968/69*	135	25,000	17,800	278	47,000	27,000
1969/70	136	21,300	—	277	43,400	21,500

Sources: L. S. Chandrakand, *Technical Education in India Today*, 1963, p. 4; *India, a Reference Annual*, 1971-72, p. 75.

* Estimated figures.

At the same time research facilities have been provided in several institutes. To meet the country's needs in economic development, the government authorities dealing with engineering and technological education introduced new courses, opened faculties that had not previously existed, such as aircraft-construction, power engineering, hydroelectric engineering, electronics and communications. One of the biggest scientific centres, the institute at Bangalore, trains cadres to work in these and other fields.

During the fourth five-year plan it was proposed to raise the annual intake of institutes to 25,000 and of polytechnics to 47,000. In fact, in 1968/69, fewer students had been admitted, a fact explained by the unemployment among graduates

with engineering and technical degrees.³¹ In 1970 the number of specialists with secondary or higher qualifications who were unable to apply their knowledge had reached 1,740,000. The fourth plan put the main accent on raising the standard of institute education, reorganising the polytechnics, expanding post-graduate study and improving the research done in educational establishments.

At present India's system of technical education has a four-tiered structure and includes trades or industrial schools, polytechnics that award the diploma of secondary technical education, institutes, which award their graduates a Bachelor's degree, and post-graduate departments.

Only graduates with a Bachelor's degree in the relevant field are admitted to post-graduate study, which occupies one to two years. Those completing this period are awarded a Master's Degree, or a similar degree. The degrees of Doctor of Science and Doctor of Philosophy are awarded by certain scientific centres for original research completed one to three years after receiving a Master's Degree.

The institutes are concerned with training technologists, planners and research engineers with broad specialisation. Entrants are persons with complete secondary education; the course takes four years, with the exception of agricultural higher educational establishments, whose programme lasts three years.³²

Education in polytechnics, which have a practical bias, is supposed to take three years but the All-India Council for Technical Education considered it necessary, in the interests of improving the situation, to lengthen the period of industrial practice and to extend the study period to four years. This was done in some polytechnics, and it was found that it made it possible, on the one hand, to raise teaching standards, and on the other hand, to train students to teach in vocational and technical schools. The work of polytechnics is supervised by councils for technical education in the states.

The need for people with secondary special education in industry prompted a decision to set up technical schools for

adolescents (age 14-17). The three-year course of these schools gives both a general and a technical education, and makes provision for production practice, which is normally undertaken in modern enterprises and occupies 55 per cent of academic time.

Work began in 1970 on reorganising technical education in order to improve the standard of teaching and bring curricula into line with the needs of industrial development.

Indian universities and higher technical establishments are fee-paying institutions. The fees are five to six times higher in private establishments than in state institutions, and amount to 500-600 rupees a year. In an attempt to democratise the education system, the state reserves a certain number of places for the members of the lower castes and the tribal people. This privilege, however, often cannot be taken advantage of as the candidates are not sufficiently prepared for entry. The private colleges, and this includes quite a number of technical establishments,³³ do not, as a rule, make any special allowance for needy students.

The development of education is retarded by the precedence status in separate states. As many institutions are controlled by the local authorities they often set a quota for entrants from other states (5 to 10 per cent), and in some cases they simply do not accept such candidates. Most technical colleges have very strict rules on student participation in various political campaigns, and stern measures, even including expulsion, are provided for cases of infringement. Quite a few representatives of Indian industrial circles sit on the commissions of various kinds that control technical education. All this is evidence that the national bourgeoisie wishes to maintain its commanding positions among the scientific and technical intelligentsia, which is also furthered by the system of scholarships paid by large industrial firms.

Quite a large number of young Indians receive their education abroad, mainly in the USA and Britain (around 15,000 in 1970). Despite the limitations imposed by the

government because of the shortage of foreign exchange, education abroad has not lost its attraction.

Solution of the problem of supplying all branches of the economy and culture with qualified cadres is complicated by the Brain Drain, i.e., the emigration of specialists. Incomplete figures indicated that 2,549 engineers, 830 scientists and 338 doctors went to the USA and Canada alone in 1962-1967.

Educational finance. There has been an immense leap in educational finance since independence (Table 43). In 1946/47 expenditure on education was 577 million rupees, which was about 1.8 rupees per head; by the end of the third five-year plan the figure was 6,000 million rupees, about 12 rupees per head.

The rate of increase in expenditure on education over the first three five-year plans (11.7 per cent) was double that of the national income (5.4 per cent). In 1966/67 expenditure by the central and state governments was 5,219 million rupees, which was an increase of 12.1 per cent on the previous year. Education is mainly financed from the budgets of the states, which spent 4,436 million rupees in 1966/67 (an increase of 11.5 per cent); the central government spent 783 million rupees (an increase of 15.7 per cent). It is difficult to determine the expenditure on education by various federal enterprises, the ministries of Health, Defence, Communications, etc. Allowing for the imperfection of the statistical services in a number of Asian countries, including India, it is quite possible that the variation in estimates of expenditure on education may be as much as 30-40 per cent. According to the UNESCO figures for 1966, the percentage of state budget allocations for education was 16.3 for the world; 19.65 for Latin America; 14.98 for Africa; and 13 per cent for Asia.

The fourth five-year plan provided for an expenditure of 8,730 million rupees on education.³⁴ If we compare this with the figures for industrially advanced countries we see that

Table 43

Expenditure on Education in India, 1950-1966

	1950/51	1956/57	1960/61	1965/66
Total appropriations (mln. rupees)	1,444	1,897	3,444	6,000
Growth index	100	166	301	524
Expenditure on education per capita (rupees)	3.2	4.8	7.8	12.1
Growth index	100	150	244	378
Gross national income (in current prices; mln. rupees)	95,300	99,800	141,400	210,000
Growth index	100	105	148	220
Per capita national income (rupees)	266.5	255	325.7	424.4
Growth index	100	96	122	159
Total expenditure on education as a percentage of national income	1.2	1.9	2.4	2.9
Growth index	100	158	200	242

Source: *Report of Education Commission (1964-1966). Education and National Development*, Delhi, 1966, p. 465.

the USSR, USA and Japan spend more than 6 per cent of their national income on education, or twice as much as India does. It is practically impossible for India, whose per capita national income is only 400 rupees, to increase expenditure on education. But it is significant that the per capita expenditure, 12.1 rupees, actually represents only 8 per cent of the per capita income of the neediest and poorest groups of the population, namely, agricultural workers in the most backward areas of the country.

It is quite obvious, moreover, that the need to improve the qualitative structure of the labour force, especially in connection with the development of production based on modern technology, is constantly increasing. There is a tendency for the disproportion between this need and the actual level of the literate population's technical training to deepen,

so that it is vitally necessary for developing countries to create a situation in which the rate of increase of expenditure on education will be higher than the rate of economic growth.

* * *

The advances of science and technology are making the conservatism of the Indian education system more and more sharply felt. Democratisation, an indispensable condition for its development, is coming about slowly. As before, secondary and higher education are hardly accessible to members of the lower castes.

Indian society has not yet been able to reform itself psychologically and move from the naïve and abstract faith in the omnipotence of knowledge to a rational attitude to education as a means of training a skilled labour force. The attitude that education is a process of accumulating information, which has been handed down from generation to generation, cannot satisfy one today, when the flow of information is increasing with incredible speed, and when it just as rapidly becomes obsolete.

The problems of the correlation between the stages of education, of the interrelations between the federal and state educational authorities on questions of planning,³⁵ and the introduction of universal primary education remain unsolved. The fact that all school-age children are not yet provided for is particularly alarming, for it means that millions of people will remain semi-literate and will not be able to take an active part in the country's economic advance.

The imperfections in the whole education system and its non-conformity with the needs of economic development give rise to conflict situations like graduate unemployment, while there is a shortage of specialists in a number of new branches of industry. Pluralism and chaos in the methods of educational management lead to dissipation of extremely limited funds, so that one can hardly regard the opening of new universities as relevant to the situation.

Teaching staffs in the main are marked by extreme conservatism and unwillingness to reorganise education, or to put the accent on developing students' abilities, or on cultivating habits of independent thinking in them. Modern methods are hardly used at any of the stages of education. India's educational reform is planned for a long period, which means that the problem of the quality of teaching standards has been shelved for at least ten years. True, the fact that many people with secondary and higher qualifications cannot apply their abilities in practice may improve the supply of teachers for secondary schools, but only if the system of teachers' remuneration is altered.³⁶ The recommendations of the Education Commission were directed to introducing a uniform pay scale for all teachers with the same qualifications, but solution of this enormous task is held up by lack of funds.

Educational development is also hampered by the language problem, which has, to some extent, cancelled out the quantitative gains made.

All we have said points to the serious situation in the Indian public education system. Social and economic conditions, in particular the multi-structural nature of the economy, limit the possibilities of objective, all-round planning and evaluation of the country's development prospects. The events of 1971, with the victory of the Left forces in the elections, gave grounds to hope for the success of social reforms and, consequently, that the pace of social and cultural change will increase. The application of the advances of the scientific and technological revolution (the extension of modern management methods to education) is one of the potential ways of improving its condition along the lines of unifying, standardising and democratising the education system, along with long-term planning at all levels and the creation of national scientific schools.

The Communist Party of India consistently advocates implementation of these aims. Its Programme, adopted at its Seventh Congress (Bombay, December 1964), stressed the

importance of introducing compulsory free school education and of improving teaching standards. In 1971 the CPI proposed in Parliament a complete re-examination of the existing system of education, with the aim of strengthening its secular character and technical bias, of granting students the right to take part in the administration of higher educational establishments, of increasing funds for scientific and technical development, of linking research planning with the needs of economic development, of eliminating bureaucracy in scientific institutions and of ensuring democratisation of their management on the basis of autonomy.

Scientific Development

The history of Indian science goes far back into antiquity. Surviving ancient manuscripts provide evidence of the outstanding achievements of Indian scholars in mathematics, astronomy, medicine, philosophy and other fields; but in the Middle Ages there was a general decline in Indian science and scholarship linked with foreign invasions.

In the period of colonial domination the development of scientific thought was retarded by the British authorities. The first scientific society, the Asiatic Society of Bengal, founded at the end of the eighteenth century, was restricted in the initial period of its activity to Britishers alone. Only in the nineteenth century were Indians admitted to membership. At the turn of the twentieth century research centres developed in Calcutta, Bombay, Poona, Madras and Delhi, and later, in Bangalore and Benares.

After political independence was gained, attempts were made to link scientific development with the country's plans for economic development, and already existing and newly-founded bodies were oriented on this, namely, the Council of Scientific and Industrial Research, the Atomic Energy Commission, the Indian Council of Agricultural Research, the Indian Council of Medical Research, the Defence Research and Development Organisation, etc. A special Act of

Parliament in 1958 defined government policy in the field of science, and proposed the following main tasks:

"To foster, promote and sustain, by all appropriate means, the cultivation of ... scientific research. ...

"To ensure an adequate supply, within the country, of research scientists of the highest quality, and to recognise their work as an important component of the strength of the nation.

"To ... initiate ... programmes for the training of scientific and technical personnel, on a scale adequate to fulfil the country's needs in science and education, agriculture and industry, and defence."³⁷

Despite such clearly formulated goals the opinion is still rife in government circles that it is better to import the results of scientific research. "Yet very few political leaders," wrote the eminent Indian scientist M. S. Jyengar, "have realised the liberating role of science. At the best they consider it a luxury. Even in a country like India, when it comes to a financial cut, the first victim is science."³⁸

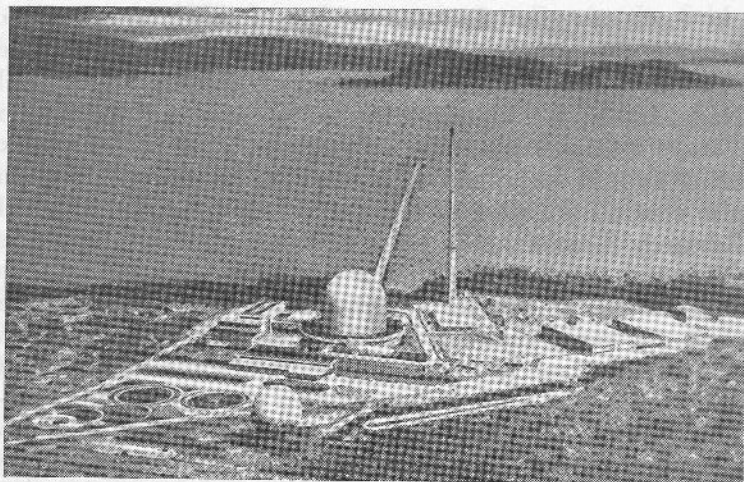
Nevertheless, one must note some success in the organisation of scientific research and the broadening of its scope, which is expressed above all in extension of the network of centres under the Council of Scientific and Industrial Research.³⁹ It co-ordinates the work of many scientific institutions, and also supports and finances research projects in the universities and other higher educational establishments. By the end of the sixties it controlled 35 national laboratories, institutes and museums in various fields, including the recently completed, well-equipped oceanographic, geophysical and oil institutes. The Prime Minister is *ex officio* the President of the Council.

Research into the peaceful use of atomic energy is guided by a special commission with the Bhabha Atomic Research Centre in Trombay working under its guidance. The latter has played a major role in developing theoretical and applied research, and it took an active part in India's first nuclear explosion in 1974. About 60 medical establishments

use radio-isotopes produced by the Centre. The Atomic Energy Commission also controls the processing of the deposits of radioactive ores in Bihar, Kerala and Tamil Nadu. India's first atomic power station was commissioned in Tarapore (Maharashtra) in 1969, and power stations were being built in Rajasthan and Tamil Nadu. The Commission also controls the work of the Tata Institute of Fundamental Research (Bombay), the Saha Institute of Nuclear Physics (Calcutta), a physical research laboratory (Ahmadabad), a high-altitude station for studying cosmic rays (Kashmir), a radio astronomy centre, a rocket station and a space research centre. India launched her first meteorological research rocket early in 1973 and intends launching a communications satellite by 1977. The long-term nuclear energy development programme provides for the building of heavy water reactors and improvement of the technology of enriching uranium ore.

Several scientific institutions have been opened under the programme of agricultural and irrigation development. The Indian Council of Agricultural Research co-ordinates the work of thirty leading government institutes and laboratories in the fields of agronomic science and fisheries. In addition it controls research institutes specialising in the growing of tobacco, jute, cotton, coco palms, etc.

The Council of Medical Research, which comes under the Ministry of Health and Family Planning, controls scientific institutes and laboratories of national importance, including the Cholera Research Centre (Calcutta), the Blood Group Reference Centre (Bombay), the Chemotherapy Centre (Madras), the School of Tropical Medicine (Calcutta), the Central Family Planning Institute (New Delhi) and the Haffkine Institute (Bombay). The Council's job is to unite the efforts of all scientific workers in the medical field and to supply them with the needed information. It is also responsible for disseminating medical knowledge. In 1956 the All-India Institute of Medical Sciences (New Delhi) was founded, which controls hospitals and colleges; some of its departments are linked with the biggest research institutions in the world.



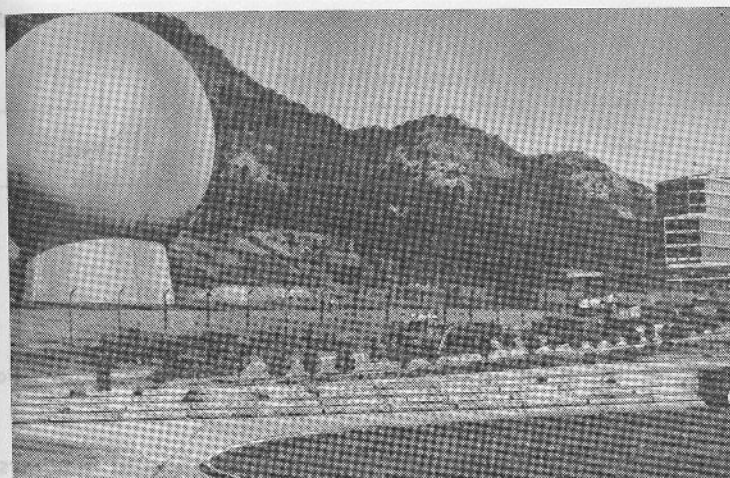
Atomic Research Centre in Trombay (Bombay)

The botanical, zoological and geological services have major scientific institutions: the Calcutta Botanical Gardens and regional botanical centres in Dehra Dun, Coimbatore, Poona, Allahabad and Shillong. The staff of the Geological Institute and its eight regional branches are working on compiling a geological map of India.

Basic research in the natural sciences is carried out in the universities according to plans controlled by the University Grants Commission. They also train scientific cadres. In recent years various Indian universities created some 30 centres for training scientific workers; in Delhi, for example, theoretical physicists and astrophysicists are trained, in Madras biophysicists, and in Bangalore biochemists.

At the end of the sixties the universities had a total of 11,500 research workers and 117,000 post-graduate students.

In 1970, with the aim of promoting the development of natural sciences, advising the government on science planning and increasing the number of scientific publications, the Indian National Science Academy was founded.



Atomic reactor

Much attention is paid, as before, to the humanities. The Indian archaeological service occupies an important place in the system of scientific institutions, and finances excavations within India. Indian anthropologists and historians have solid work to their credit. The acuteness of the language problem has led to the publication of quite a number of works on linguistics, both by the universities and by special institutions like the Central Institute of Indian Languages in Mysore. The government supports and guides the work of the National Academy of Letters, the Academy of Indian Music, Dance and Drama and the Academy of Art.⁴⁰

There has been a marked increase in government allocations for research. And individual institutes, of which the largest are the Bose Institute in Calcutta (physics, chemistry, physiology, genetics and microbiology), the Indian Institute of Science in Bangalore and the Institute for Industrial Research in Delhi, are financed jointly by private and governmental organisations (Table 44).

India has many functioning scientific societies, academies

Table 44

Outlay and Expenditure on Scientific
Research (mln. rupees)

Period	Budget appropriations	Additional* appropriations	Total
Third Five-Year Plan	714.9	730	1,444.9
1966-1969	471.5	834.4	1,305.9
1969-1974	1,402.6	1,983.2	3,385.8

Source: *Fourth Five-Year Plan, 1969-1974*, p. 381.

* Funds allotted both by government and private organisations for specific projects.

and associations that bring together scientists and scholars in given fields. As they do not possess the funds needed to promote research, they are limited to holding conferences and symposiums and publishing scientific literature. The biggest society is the Indian Scientific Congress. It has annual sessions to which foreign scientists are also invited.

There is no doubt that the development of science is directly dependent on the consistency and thoroughness of social transformations and on the scale of the capital investment put into it. There is also no doubt that the rates of economic growth are both directly and indirectly linked with the state of affairs in science: directly, in application of the results of research, and indirectly, in the changing of methods of management and control.

The system of scientific institutions, splintered and hierarchical, and the standard of science in India, nevertheless, cannot be said to be satisfactory, and this is heard more and more often from Indian scientific opinion. Homi Bhabha, for example, noted that "absence of the necessary system of management was more a hindrance to the progress of science and technology than was the shortage of scientists and technicians". The administrative structure, designed with insufficient forethought, according to Bhabha, lowered



Nutrition Research Institute in Mysore

the effectiveness of the activity of scientific and technical workers.⁴¹

"The tradition of science is not yet strong in India," wrote Prof. P. C. Mahalanobis. "There is no critical appraisal of scientific research. Most of the work is essentially imitative. Some competent work is being done, but not much research of high quality. Less than 10 per cent of the R & D expenditure is being incurred in industrial enterprises in India in comparison with about 75 per cent in USA and 65 per cent in UK and Japan. A very large part of the research and development which is done in Government agencies or under direct Government control, has little connection with production. The present deplorable situation is due essentially to institutional deficiencies and rigidities."⁴²

Another obstacle is the lack of attention to fundamental theoretical research, which leads, in addition, to the most talented young people leaving India to work in laboratories in capitalist countries (mainly in the USA and Britain).

In recent years the Indian Government has been paying more attention to these problems. In her opening speech at

the UNESCO Conference in Delhi in 1968 Indira Gandhi stressed the leading role of the state in the development of a country's science. "But the experience in Asia," she said, "is that unless governments themselves are committed to economic growth, such growth is slow to come. . . . It is now our endeavour to rationalise the structure of Indian science and to relate it more closely with the processes of planning and development. We must have a 'policy for science' and equally 'science in policy'."⁴³

The Government welcomes contacts between Indian and foreign scientists; and links between the scientific institutions of India and the Soviet Union are being specially strengthened. Exchange of information and visits by delegations from each country to the various scientific conferences of the other have become normal events. The USSR Academy of Sciences is playing a major part in stimulating Soviet-Indian scientific relations.

Mass Media

The first Indian newspaper, the *Bengal Gazette*, appeared on January 29, 1780, in Calcutta. As it was intended for the employees of the East India Company, it was published in English. Only in 1818 did a newspaper come out in Bengali, *Samachar Darpan*. In the 1830s and 1840s, despite the obstacles created by the colonial authorities, the number of publications in local languages increased, which had great significance in spreading the ideas of the national liberation movement.

After independence the mass media took on a much greater role. According to official figures, 10,331 different newspapers, magazines and bulletins were published in India in 1969 in the main Indian languages, and also in English, Chinese, Portuguese and French (Table 45), including 646 daily newspapers (total circulation 6,600,000), 2,697 weeklies, and 3,772 monthlies. Formally, most of them

belong to private individuals, but as a rule they are controlled by big monopoly capital. The most important publishing centres for newspapers and periodicals are Delhi (1,016 titles), Madras, Bombay, Calcutta, Trivandrum, Mysore, Benares and Hyderabad. A peculiarity of the press is that there are no all-India organs, which also applies to the English-language newspapers like the *Times of India* and *Statesman*.

A national bibliographical centre was founded in 1954 (attached to the National Library in Calcutta), but as yet statistical material on book production is not published regularly. Far from complete data suggest that 13,094 book and brochure titles were published in 1965, 12,123 in 1966, and 13,614 in 1971, of which about 40 per cent were in English.⁴⁴ The biggest publishing houses are located in Bombay, Delhi, Calcutta, Madras, Benares, Poona and Hyderabad.

Table 45

Number of Newspapers and Magazines
(by Language) in 1969

Language	Number of titles	Total circulation (000s)	Language	Number of titles	Total circulation (000s)
Hindi	2,508	4,187	Kannada	224	580
English	2,123	5,551	Punjabi	222	276
Urdu	886	1,149	Oriya	100	138
Bengali	655	1,229	Sindhi	67	103
Marathi	622	1,365	Sanskrit	28	5
Gujarati	561	1,529	Assamese	35	885
Tamil	440	2,489	Others	1,095	799
Telugu	321	735			
Malayalam	394	1,567	Total	10,331	22,587

Source: *India*, 1970, p. 149.

At the end of the sixties governmental organisations suggested paying special attention to the publication of books

for children and young people and to a cheap mass library.⁴⁵ To this end a National Publishing House was founded and it receives large government subsidies. A series of books for children, called the "Nehru Series", in honour of Jawaharlal Nehru, is being issued in large printings in the main languages of India. One of its purposes is to promote the idea of national integration. Leading scientists, writers and artists are involved in the venture. Its success prompted the publication of other series aimed at a very broad readership.

The first of these, "India—Country and People", aims at giving a most comprehensive idea of life in India. The "Biographical Series" aims at acquainting readers with the lives of eminent figures of Indian culture. The "Indian Youth Library" publishes books about the most important events in history and modern times, and up-to-date material on the achievements of world science and technology. The World Book Fair held in New Delhi in 1972 helped promote interest in books.

The development of Indian publishing is being held up by the shortage of paper for the country's printing industry. According to UNESCO data per capita paper consumption was 0.7 kilograms in 1967, against 1.3 kilograms in Ceylon, 12.2 kilograms in Japan, 4.2 kilograms in Argentina and 24.5 kilograms in Canada.

After the achievement of independence the Press Trust of India was founded as a press agency with an extensive network of correspondents at home and abroad. In addition to it there are six other press agencies, of which the Hindustan Samachar issues information in Indian languages, and the Samachar Bharati and United News of India⁴⁶ have agreements with the biggest international agencies.

India has 48 radio stations broadcasting in all the regional languages and in the principal dialects (more than 80). All-India Radio's programmes include news, talks, discussions, music, literary programmes, children's programmes, village broadcasts, general educational pro-

grammes for schoolchildren and special broadcasts for students. Commercial broadcasting (from Calcutta, Bombay, Madras and Delhi) allots much time to advertising. Considerable time is also given to the programme for Indians abroad.

According to incomplete figures, there were nearly eight million radio sets in the country in 1967. In its concern for rural radio the central government subsidised extension of the radio relay network. It is also intended to use the relay network for a series of broadcasts on the functional literacy programme and to improve the standard of knowledge among various categories of people.

The first television broadcast in India was made in 1959, but television has not made marked progress since then. At the time of writing there were two television centres, in Delhi and in Bombay, and plans to open more by 1976 in Madras, Calcutta, and either in Kanpur or in Lucknow. It was also planned to build a series of relay stations for general educational telecasts, and to build up a domestic television industry. At the time of writing there were some 25,000 TV sets in the country, but their high cost (almost 1,000 rupees) considerably hinders their becoming common.

India is a major film producer. Films are made in 12 local languages, and are an important export item. In production of full-length feature films (about 350 a year) India is second in the world after Japan. She also produces many popular science and advertising films, and about 150 shorts a day (newsreels and documentaries), which play a certain role in the development of education.

Health Protection

Until the very end of the nineteenth century the administrative apparatus of British India had no health department. The harsh living conditions of the native population, who were systematically starved and heavily exploited, the

absence of even the most elementary domestic comforts and the terrifyingly insanitary conditions gave rise to mass epidemics and the death of hundreds of thousands of people. Frightened by the prospect of losing considerable numbers of working hands, the British eventually got round to taking measures of a sort. Several institutions for studying and treating tropical and epidemic diseases were founded in the second half of the nineteenth century, but in a haphazard way.

During the upsurge of the national liberation movement, progressive Indians tried to draw attention to the problem of combating disease, insanitary conditions and harmful customs (child marriages, etc.). "Some of the [Indian] national habits," wrote Mahatma Gandhi, "are bad beyond description, and yet so ingrained as to defy all human effort. Wherever I go this insanitation obtrudes itself upon my gaze in some shape or other."⁴⁷

The efforts of Indian patriots naturally could not make a radical change in the situation. On the eve of independence only a part of the urban population had in fact been provided with preventive and therapeutic aid. The vast mass of the rural population remained outside the scope of the medical service.

Despite the inadequacy of the statistics available to the author they still give some idea of the condition of medical care in South Asian countries before the Second World War (Table 46).

Immediately after 1947 India was faced with the task of finding the right road to social development. The utter neglect of these problems by the colonial authorities, the features of social and psychological relationships, the age-old burden of caste limitations and financial difficulties prevented rapid solution of health problems.⁴⁸

During the first years after independence the high birth rate of the previous hundred years, which was close to the physiological maximum, continued; but until the end of the forties it was balanced by a high death rate. There

followed a steep fall in the latter, partly as a result of the discovery and use of antibiotics. This situation led to a

Table 46

Numbers of Physicians and Hospital Beds per
100,000

Country	Year	Physicians	Hospital beds
India (undivided)	1940	10	30*
Netherlands Indies	1938	1.7	90
Burma	1937	9.7	62**
Thailand	1940	1.3-2.0	17-20
Ceylon	1938	15.9	200

Source: Gunnar Myrdal, *Asian Drama*, 1968, Vol. III, p. 1606.

* A liberal estimate.

** Government service only.

great increase of population and gave rise to additional social and economic problems. For all that the death rate in India is much higher than in developed countries: in Japan it is 7.6 for example, and in the USSR 7.1 (the lowest in the world). Infant mortality (in the first year) is especially high, at about 150 (31 in Japan, 22 in Britain, 26 in the USA).

One of the first measures taken by the government of sovereign India was to set up a modern health service, although the funds available did not meet even the minimum essentials. Nevertheless, by 1961 the percentage of illnesses had fallen sharply, the network of medical establishments had been extended, the number of medical workers increased, and a basis had been laid permitting hopes of radical changes in the health system. The figures on expectation of life also give an idea of the progress made in this area. Whereas the average expectation of life of men was 32.5 years and that of women 31.7 in 1941-1950, in 1966-1970 it was 53.2 and 51.9 respectively.⁴⁹

The system of medical care is headed by the Ministry of Health, Family Planning and Urban Development. Its

functions include co-ordination of the efforts of state health bodies, training of medical personnel, medical research and the manufacture of medicines. Local departments are responsible for all treatment and preventive work in the states and union territories.⁵⁰

In the national scheme the basic unit of the health service is to be the Primary Health Centre, linked to community development centres and including a hospital, laboratory and other facilities. Health centres are expected to act as strongpoints for disseminating propaganda on sanitation and hygiene, to help vaccinate the population, to implement the government's programme for eradicating epidemic diseases and to organise water supply. They are assigned a major role in improving medical standards among tribal peoples and lower castes, which are the most backward sections of Indian society. The Articles of the Constitution on priority attention to the needs of these groups by state governments, it must be noted, are not being carried out satisfactorily.

To finance the Health Centres, it was proposed to levy local taxes, the proceeds of which were to go to their maintenance.

Despite the efforts of governmental organisations, they did not succeed in altering the situation in public health during the first three five-year plans. In 1969 it was estimated that around fifty million people lacked medical aid of any kind, that 119,000 out of 560,000 villages did not have water fit to drink. There was an acute shortage of medium-level medical workers, the ratio being one to every five senior workers. Caste prejudices have complicated the recruitment of low-qualified personnel.⁵¹

At the beginning of the fourth five-year plan the situation in individual states and in the union territories varied considerably (Table 47). The position was worst in the densely populated states like Uttar Pradesh, Bihar and Orissa; and these are the places, incidentally, where epidemic diseases are most often registered.

Having made a sober study of the situation, the Indian



Medical check-up in a rural health centre

Government planned to double expenditure on health in comparison with the third five-year plan (Table 48). Perhaps, for the first time since independence a programme was envisaged that, if implemented, could wipe out the consequences of colonial domination. The increase in the number of hospitals and of qualified medical staff in the health centres, and the close contact between them and the local administration should improve the public medical service and make it possible to wage national health campaigns. It was supposed that, by 1976, one doctor would be serving 4,300 people; and it was intended to expand the training of medium-level medical personnel considerably and to organise medical training at the health centres for healers, midwives and others practising folk medicine (Table 49).

Table 47

Health Programmes: Level of Achievement at the Beginning of the Fourth Plan

State, union territory	Estimated population in 1968-69 (000,000s)	Medical colleges	Primary Health Centres		Sub-centres	Hospital beds per 1,000 persons
			Functioning	Yet to be established		
Andhra Pradesh	44.7	8	409	9	1,122	0.61
Assam	14.8	3	99	77	300	0.45
Bihar	55.4	4	587	—	3,523	0.24
Gujarat	25.3	5	250	—	1,497	0.46
Haryana	9.5	1	89	—	482	0.44
Jammu and Kashmir	3.9	4	69	4	118	1.0
Kerala	20.4	4	163	—	1,584	0.94
Madhya Pradesh	39.0	6	428	29	1,220	0.32
Maharashtra	47.9	11	382	44	2,776	0.5
Mysore	28.1	9	265	1	2,470	0.52
Nagaland	0.4	—	6	11	15	2.25
Orissa	20.7	3	309	5	747	0.37
Punjab	14.0	4	127	1	659	0.69
Rajasthan	25.0	5	232	—	574	0.51
Tamil Nadu	38.3	9	347	65	1,887	0.7
Uttar Pradesh	87.3	8	740	135	2,902	0.37
West Bengal	42.8	6	225	110	548	0.85
Andaman and Nicobar Islands	0.07	—	1	4	1	1.0

Table 47 (continued)

State, union territory	Estimated population in 1968-69 (000,000s)	Medical colleges	Primary Health Centres		Sub-centres	Hospital beds per 1,000 persons
			Functioning	Yet to be established		
Chandigarh	0.145	—	—	1	—	5.51
Dadra	0.07	—	2	—	2	2.8
Delhi	3.89	3	5	1	34	2.4
Goa, Daman and Diu	0.76	1	15	—	—	2.3
Himachal Pradesh	3.45	1	72	6	251	0.6
Pondicherry	0.44	1	11	1	—	0.95
Others	2.78	—	—	4	60	—

Source: Fourth Five-Year Plan, 1969-1974, p. 397.

A social insurance scheme is being introduced, though on a very limited scale, and the main burden of the cost of treatment is borne by the patients themselves, only the very poorest being absolved from paying.

Among the tasks set before the health service by the government, a central one is the struggle against epidemics and dangerous diseases, above all that terrible legacy of the colonial regime, tuberculosis. In the 1940s mortality from tuberculosis was 15-20 per cent of the overall figure. A broad anti-TB campaign was begun in 1948, with more than 200 million people being examined in around ten years. Matters were extremely complicated by the fact that many Indians think tuberculosis is an "evil" disease which must be concealed from strangers. Investigations showed that between seven and thirty people per thousand (according to area) had an active form of tuberculosis, that villages and small towns had a higher percentage of TB cases, and that it was more common in men than in women. The highest numbers of cases were registered in Kerala, Maharashtra, Tamil Nadu, West Bengal, and Uttar Pradesh, which is very closely linked with the bad social and living conditions in those areas.

At the time of writing ten Indian universities were training phthisiologists. World Health Organisation aided in founding the National Tuberculosis Institute in Bangalore. There were 502 functioning TB clinics, 195 of which had been recently built and had modern equipment.

The fourth five-year plan envisaged further expansion of the country's biggest chemotherapeutic centre in Madras, and the tuberculosis research institution in Madanapal, and the setting up of 17 demonstration and training centres in various states, which would be responsible for providing refresher courses for personnel and carrying out propaganda among the people (Table 50).

There is no doubt that the efforts of the health service and of international organisations have yielded quite good results. But the reduction of illness depends not only on

Table 48

Health Finance, 1961-1974 (mln. rupees)

Year	Expenditure				total
	by central government	by state governments	by union territories	centralised finance	
1961-1966	148.3	1,932.4	123.3	54.6	2,258.6
1966-1969	167.6	1,052.4	69.7	111.4	1,401.1
1969-1974	535.0	1,857.5	192.8	1,765.0	4,350.3

Source: *Fourth Five-Year Plan 1969-1974*, p.386.

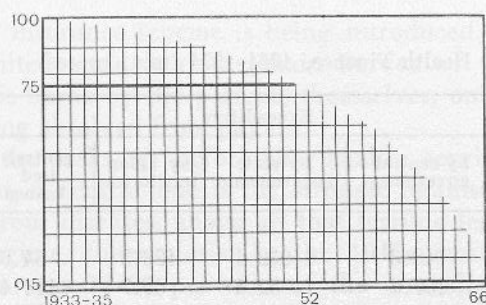
Table 49

Health Service in 1960-1974

	1960/61	1965/66	1968/69	1973/74
Primary Health Centres	2,800	4,631	4,919	5,427
Medical colleges, number	57	87	93	103
Annual admissions	5,800	10,520	11,500	13,000
Dental colleges, number	10	13	15	15
Annual admissions	281	506	586	800
Hospital beds	185,600	240,100	255,700	281,600
Physicians	70,000	86,000	102,520	137,930
Nurses	27,000	45,000	61,000	88,000
Midwives	19,900	36,000	48,000	70,000

Source: *Fourth Five-Year Plan 1969-1974*, p. 396.

purely medical measures, but also on improvement of nutritional standards. The figures on the consumption of various food products show how backward India is in this respect (Table 51).⁵² The carrying out of a successful anti-TB campaign is also hampered by the low level of domestic hygiene, bad sanitation and the actual absence of any labour safety measures in many industrial enterprises, especially private ones.



Dynamics of malaria cases in India (mln.),
1936-1966

Decisive measures have also been taken to combat malaria. Through mass use of medicines and chemicals (mainly DDT) malaria has been cut back from 75 million cases in 1952/53 to 10 million in 1960/61, and 200,000 in 1967. It is expected to have this disease completely stamped out by 1975-1976. Prophylactic work is entrusted to the local authorities, who dispose of 39,325 anti-malaria stations. These stations admittedly are quite poorly equipped, but still they can carry out preventive measures and give treatment. In addition six regional centres have been set up, which co-ordinate anti-malaria work in Baroda, Bangalore, Hyde-

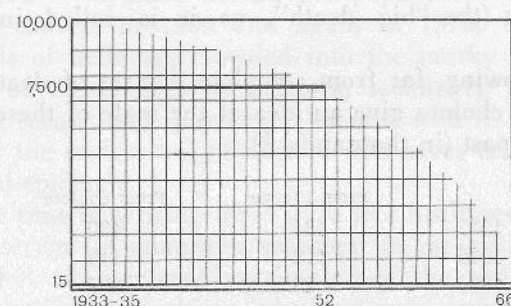
Table 50

The Tuberculosis Service, 1960-1974

	1960/61	1965/66	1968/69	1973/74
Clinics	220	427	502	582
Demonstration and training centres	10	15	15	17
Isolation beds	26,500	35,000	35,000	37,500

Source: *Fourth Five-Year Plan*, p. 396.

rabad, Shillong, Lucknow and Bhuwaneswar. Responsibility for research, training and refresher courses rests with the National Institute of Communicable Diseases.



Economic losses incurred by malaria in India
(mln. rupees), 1933-1966

Table 51

Current Level of Consumption of Food Products
(grams per person per day)

Product	In India	Average throughout the world
Cereals	375	370
Starch-containing root-crops	30	227
Sugar	45	47
Beans and nuts	65	42
Vegetables and fruit	80	227
Meat	4	67
Fish	7	27
Eggs	1	12
Milk and milk products (except butter)	140	228
Animal fats and vegetable oils	11	22
Total calories	1,970	2,420

Source: P. V. Sukhatme, *Feeding India's Growing Millions*, Asia Publishing House, 1965, p. 79.

The fight against plague, cholera and smallpox remains a most serious problem. Epidemics of plague were constant occurrences in colonial India despite the fact that certain measures were taken by the British authorities against *umhamara* (the "big death", as it is called in Uttar Pradesh).

The following, far from complete, figures of deaths from plague and cholera give an idea of the scale of these calamities in the past (in thousands):⁵³

	From plague	From cholera
1915	434	430
1925	118	116
1930	25	337
1935	29	223
1940	20	103
1945	44	317
1949	11	51

Today India has none of the so-called catastrophic epidemics⁵⁴ which used to carry off millions in the nineteenth century, but the diseases are still fairly common. Though the Indian Health Service⁵⁵ has achieved much against plague in the past 15 years (it having been practically wiped out in the towns), the disease has not yet disappeared in some states (Uttar Pradesh, Mysore and Tamil Nadu), and the inexorable statistics record new cases every year. In 1969 WHO's committee for the fight against plague called on all national health services to concentrate efforts on stamping out plague and to improve exchange of information on the disease in humans and animals in order to prevent mass outbreaks.

The areas where cholera is most common are West Bengal, Uttar Pradesh, Orissa, Maharashtra and Mysore. During the epidemics in 1953, 1957-1958 and 1966, 141,000 deaths were registered; in 1968 there were 20,749 cases, 3,353 with a fatal outcome. There would seem to be a number of reasons for periodic outbreaks of cholera, in particular the fact that

necessary measures are not taken in densely populated areas, but the main reason must be seen to be the unsatisfactory organisation of water supply, and lack of the most elementary habits of hygiene among the population. The author had the chance, in 1969 and again in 1970, to see how thousands of believers crowded into the murky water of a channel of the Ganges in Calcutta, seemingly heavy with mud and refuse, and rinsed their mouths with it. It is doubtless only the selfless toil of doctors that saves this city from perpetual epidemic.

At the time of writing there were five institutes producing cholera serum (in quantities sufficient to meet the country's needs), but 100 per cent vaccination of the population encounters serious difficulties, linked not only with the shortage of medical workers but also with causes of a social and religious nature. It would be relevant to recall the episode in Phanishwarnatha Renu's novel *The Dirty Coverlet*, which deals with a cholera epidemic in North India in the 1940s. Doctors were inoculating the inhabitants of a village. For this and medicine it was necessary to pay a sizeable sum: 50 rupees. The father of a girl sick with cholera could only get the money together by selling his bullocks, but he could not bring himself to part with them. "If the girl is fated to live," he comforted himself, "she will survive without medicines."

When the doctor sent a sanitary inspector to disinfect the wells the villagers blocked his way. "The doctor wants to infect our village," they shouted. "You tell him: we're no fools, we too can see what's going on."⁵⁶ Ignorance, unfortunately, continues today to obstruct the implementation of many sanitary measures.

A witness nearer to our own times, the French writer Pierre Gascar, who was sent by WHO in 1956-1957 to visit a number of African and Asian countries, including India, wrote a book about it, *Voyage chez les vivants*.

"Some time ago in Allahabad," he wrote, "it was decided to give cholera vaccinations to a million pilgrims who were

to take part in a religious festival. The city's authorities, businessmen and merchants had invested large sums in providing facilities for the pilgrims. When the latter learnt that they would have to undergo a cholera vaccination most of the pilgrims refused to go to Allahabad. It was a real financial disaster for the city. Last year (1955) the sanitary rules were relaxed, and vaccination was made voluntary. The pilgrims flooded into the town. Cholera broke out and took three hundred lives.⁵⁷

There are no grounds for thinking that the situation today has altered radically, since the deadline set by the government for the final wiping out of cholera, 1972, was not met.

The campaign against smallpox waged with the help of international organisations and of a number of countries, has had very definite results, though the number of cases recorded each year is still considerable. In 1966, according to WHO, 32,616 cases were registered. Today 80 per cent of the population receive systematic vaccinations, and four centres (Madras, Hyderabad, Belgaum, and Patwadangar) produce smallpox vaccine of international standard.

The fourth five-year plan set the aim of vaccinating all new-born babies and revaccinating the inhabitants, mainly of the traditional smallpox areas, at three-year intervals.

That could only be achieved if accompanied with a great explanatory, educational campaign; the idea that smallpox is a sign of favour from the goddess Kali still prevails among the backward section of the population. A crowd of admiring neighbours will often throw themselves on a smallpox victim, and sometimes whole villages will refuse vaccinations so as not to offend the goddess.

The USSR is playing an important part in the WHO programme to stamp out smallpox. Between 1967 and 1970 the USSR donated 75 million doses of vaccine to World Health Organisation; and another 75 million doses were supplied in 1971-1973.⁵⁸

A national programme to fight leprosy was instituted in 1955. There are no accurate figures of the numbers of lepers, but experts estimate that there are some 2,500,000, 20 per cent of whom suffer from the acute form, but as a rule are not isolated from the rest of the population. Most lepers are in Tamil Nadu and Andhra Pradesh, but they are also to be found in Orissa, Bihar, Mysore and West Bengal.

The first voluntary organisation in India to combat leprosy was the Mission to Lepers, founded a century ago in 1875, and it continues its noble work today along with the Gandhi Memorial Fund and the Rama Krishna Mission. There are now, at the time of writing, 182 control stations, 1,035 leprosy points in primary health centres, and special dispensaries and hospitals. Medical and administrative staff are trained by the Central Leprosy Research Institute in Madras and the All-India Centre for Training of Doctors at Nagpur, and medium-level personnel are graduated from ten centres in various states.

Treatment with sulphadiazine is giving encouraging results and allows the patients to live at home under medical supervision. This requires special teams to supply medicines and control the course of treatment. A system on these lines is working well in Thailand, and experimental work has also been done in India.

Venereal diseases are still very common in India. Experts estimated that 10 per cent of the population were suffering either from syphilis or gonorrhoea in 1950, and a government campaign envisaging the use of modern methods of treatment was started in 1953. By the time of writing 145 district clinics had been opened and seven major VD hospitals, which also take preventive measures. The initial and post-graduate training of specialists is carried out in Delhi and Madras.

India has created its own pharmaceutical industry since independence; much help has been given by the Soviet Union, who aided in the building of India's largest anti-

biotics factory and a works making medical instruments. Most medical enterprises belong to the state.

The increase in urban population, associated with the influx of enormous numbers of rural inhabitants, has given India yet another problem: the terrifying lack of sanitation in the big cities (especially in Calcutta, Benares, etc.). Seeing that the forecasts of demographers on the growth of some towns are simply terrifying (they calculate, for example, that Calcutta will have a population between 36 and 50 million by the 1980s),⁵⁹ it is not difficult to imagine the problems this will present for housing construction, the provision of sanitation and hygienic facilities and employment.⁶⁰ The municipal economy of Calcutta is already in an unsatisfactory state. According to the West Bengal Statistical Bureau, around 600,000 people were living in its slums in 1965; and according to UN data about 15 per cent of its population live in little shops or workshops, 30 per cent share rooms with two other families and 17 per cent live on the street.

Some steps are being taken to improve sanitary conditions in the large cities (drainage and water-supply construction, municipal housing schemes) but on a scale which does not match the demand, and so this remains one of the most vital problems for the near future.

Family Planning. The continuing high birth rate in India and the steep drop in the death rate, as we have already noted, have resulted in rapid growth of population. Demographers' estimates give some idea of the outlook for the near future (Table 52). The annual increase of between ten and fifteen million people forced the government to adopt a policy aimed at restraining population growth and bringing it into line with the country's material resources, and a Committee for Research into Family Planning was formed in 1951 to work out a programme on a national scale. This programme began to be implemented in 1956

under the slogan: "Wait with the next child, stop after the third!"

Wide propaganda and use of the mass media definitely played a role. According to the optimistic estimates of Indian health workers, 15 million births had been prevented by 1969.⁶¹ The goal set in 1963 of reducing the birth rate within ten years from 41 per thousand (in 1961) to 25 per thousand was the basis of the fourth plan's programme for birth control, but the target for 1973 was raised to 32 per thousand.

Table 52

Population Estimates for Selected Asian Countries
for 1970, and Projections up to 1980 (000,000s)

Country	1970	1975	1980
India	543.2	611.0	682.3
Iran	25.4	28.9	33.0
Indonesia	118.2	133.5	152.7
Turkey	36.6	42.2	48.4

Source: *World Population Prospects as Assessed in 1963. Population Studies* No 41, United Nations, New York, 1966, p. 140.

The government has been energetically subsidising family planning centres and consultative services (Table 53), has expanded the production of contraceptive devices and has been training necessary medical personnel. It was intended to spend 3,100 million rupees for this purpose (that is to say ten times as much as under the third plan). It was also planned to spend some 100 million rupees on birth control propaganda between 1969 and 1974, and a bill on establishing a minimum age for marriage was drafted (20 for women, 25 for men).

World Health Organisation takes some part in financing the birth control campaign, although, according to its Constitution, it has no responsibility for recommending or encouraging any particular policy on this question.⁶²

The programme is run on a voluntary basis. The government promises some recompense for using contraceptives, and has lowered their retail price. Birth control measures have not met any opposition from the religious organisations, but the employment of such a radical means as sterilisation, sometimes of utterly ignorant people who are not really able to realise the consequences, raises a sharp ethical problem.⁶³

Table 53

The Family Planning Service, 1961-1974

	District family planning centres	Urban family planning centres	Rural family welfare planning centres	Rural subcen- tres	Family planning training centres*
Third Five-Year Plan	119	1,381	3,676	7,081	30
1966-1969	303	1,797	4,326	22,826	48
1969-1974	335	1,856	5,225	31,752	51

Source: *Fourth Five-Year Plan, 1969-1974*, p. 393.

* Including central institutes.

It is still premature to talk of the family planning campaign as a success. In general basic changes in the demographic situation cannot be effected solely by medical means. What is needed are real social, economic and cultural transformations, an improvement in the economic situation, increased literacy and so on.

Paradoxical as it may seem, the popularity of the family planning programme contributed to the success of the "Green Revolution". The solution, though partial, of the food problem eliminated the threat of high mortality, and the birth rate, which carries with it the threat of potential unemployment, has become one of the most important problems.

Serious measures have been taken in the years since

independence, thanks to the activity of the central state authorities, to improve the quality of labour resources. Certain progress has been made in cultural development (democratisation of elementary education, the achievements of Indian science, and the elimination of catastrophic epidemics), which allow one to assume that the foundation has been laid for removing one of the worst legacies of the colonial era, namely, the discrepancy between the need for human resources (as the vital factor in the productive forces) and their actual condition.

In evaluating the achievements of independent India it must not be forgotten that the country is developing under complicated and difficult conditions. In 1975 rightist forces attempted to challenge Indira Gandhi's government and disrupt its progressive reform programme. This led to the declaration of a state of emergency, and the adoption of measures aimed at limiting rightist activities.

The Indian government has taken energetic steps to improve the people's living conditions, eliminate poverty, intensify industrial and agricultural production and to carry through their social and cultural reform programme.

In L. I. Brezhnev's Report to the 25th Congress of the CPSU he stressed: "Soviet people appreciate and, more, are in solidarity with India's peace-loving foreign policy and the courageous efforts of her progressive forces to solve the country's difficult socio-economic problems. We wish the people and government of India complete success in these efforts."⁶⁴

¹ L. I. Brezhnev, *Following Lenin's Course*, pp. 300-01.

² *International Meeting of Communist and Workers' Parties, Moscow, 1969*, Prague, 1969, p. 474.

³ L. I. Brezhnev, Report of the CC CPSU to the 24th Congress of the CPSU, in *24th Congress of the CPSU*, Moscow, 1971, pp. 24-25.

⁴ According to the 1961 census the total population of India fell into the following age-groups (in percentages):

up to 4 years	15.0
5-14 "	26.0
15-24 "	16.7
25-34 "	15.4
35-44 "	11.0
45-54 "	8.0
55-64 "	4.8
65-74 "	2.1
75 and over "	1.0

⁵ We will not go into the history of education in India. Many books have been written on this theme, and those who are interested are referred to the following works by Indian and Soviet authors: S. Mukherji, *History of Education in India*, Baroda, 1955; N. A. Konstantinov, *Shkolnaya politika v kolonialnykh stranakh* (School Policy in Colonial Countries), Moscow, 1948; *U novoi Indii* (In New India), Moscow, 1958; M. T. Kondakov, *U shkolakh Indii* (In the Schools of India), Moscow, 1958; A. A. Nusenbaum, *Narodnoye obrazovaniye v Indii* (Public Education in India), Moscow, 1958; A. G. Smirnov, *Nauchno-tekhnicheskaya intelligentsia v Indii* (The Scientific and Technical Intelligentsia of India), Moscow, 1967.

⁶ *Speeches by Lord Macaulay with His Minute on Indian Education*, London, 1935, p. 359.

⁷ The role of the Christian churches in the development of education in India was and remains considerable. The high percentage of literacy in states and territories with fairly big groups of Christians (according to the 1971 census: 60.2 in Kerala and 44.5 in Goa, Daman and Diu) is due also to the work of missionary schools.

⁸ Rabindranath Tagore was extremely concerned with the future of the Indian people. "The wheels of fate," he wrote in his testament, "will some day compel the English to give up their Indian Empire. But what kind of India will they leave behind, what stark misery? When the stream of their centuries' administration runs dry at last, what a waste of mud and filth they will leave behind!" See: Jawaharlal Nehru, *The Discovery of India*, New York, 1946, p. 477.

⁹ Cited from G. Myrdal, *Asian Drama*, Vol. III, Clinton, 1968, p. 1737.

¹⁰ In India today, it must be said, despite a number of government measures, neither the problem of education for the lower castes nor that for girls has been adequately solved.

¹¹ Cited from G. Myrdal, *op. cit.*, p. 1810.

¹² *The Constitution of India*, Delhi, 1956, p. 26.

¹³ Prof. S. Shumovsky, of the USSR, took part in this work.

¹⁴ State educational establishments limit themselves to training staff for these institutions and to publishing handbooks on method.

¹⁵ There are hardly any in the villages, and the so-called unrecognised establishments are not worthy of serious attention.

¹⁶ Indian demographers assert that the local authorities regularly inflate the actual intake figures for primary schools, and that drop-out is more significant than has been assumed. (See "Census of the Population of India: First Results", *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 8, 1971, p. 133).

¹⁷ In 1970 the author had the opportunity of talking to schoolchildren in Kerala, and was able to ascertain without difficulty that the age differential is sometimes as high as four or five years.

¹⁸ *Fourth Five-Year Plan 1969-1974*, p. 356.

¹⁹ From his conversations with Kerala schoolchildren in 1970 the author learned that they did not study either English or Hindi. This was due, on the one hand, to lack of teachers, and, on the other, to the opposition of local separatists, who were particularly hostile to the teaching of Hindi.

²⁰ Interesting information on the life of the tribes is given by the Soviet researcher L. Shaposhnikova in her *Taina plemeni golubyykh gor* (Secret of the Blue Mountain Tribe), Moscow, 1970.

²¹ A network of libraries for adults was also set up. According to Ministry of Education figures, there were 19,656 permanent and 4,288 mobile libraries in 1965 and around 17,000 reading rooms.

²² Some countries have had good results from radio and television teaching, but it is rather difficult to hope for rapid progress in India. In 1967 there were 548 TV sets in schools, and only 297 club sets in the Delhi area. Preparations were under way on an Indo-American experimental project (in co-operation with UNESCO) envisaging the launching of a special Earth satellite that would make it possible to relay education television broadcasts that would be made in the telecentres of seven districts. The National Board of Adult Education had not as yet proved itself in practice, but it cannot be faulted for its resolutions and recommendations.

²³ Solution of the problem is hampered by caste differences. Brahmins consider it beneath their dignity to teach the "low-born", thus making it necessary to look for teachers among Christians and the lower castes, who find it difficult to gain authority in rural areas, where caste prejudices are especially strong.

²⁴ Some sources indicate that only 622,105 of the 836,212 primary school teachers have the necessary training. The bulk of the teachers come from one-year and two-year teacher training schools (of which there were 1,548 in 1965). See: Sharma Nardev, "Primary School Teacher Training in India", *Narodnoye obrazovaniye*, No. 11, 1970.

The supply of experienced teachers for incomplete secondary schools varies in the different states. According to official figures 18 per cent of the teachers in Assam are qualified, and 92 per cent in Tamil Nadu.

²⁵ Women constituted 10.9 per cent in 1950/51, and 16.2 per cent in 1960/61.

²⁶ Most of the universities are in northern states (Uttar Pradesh and Punjab), and there are not many in the south (Kerala and Tamil Nadu). The considerable increase in the number of universities has not corresponded (with rare exceptions) to the possibilities of equipping them.

²⁷ *India. Pocket Book of University Education*, 1972, p. 88. There were 1,223 private colleges in 1961.

²⁸ It has been noted that the University Grants Commission had been gradually moving in recent years from a position of "watchful bureaucracy" to active support of the government in realising plans for social and economic reforms. Since 1970 there has been a scheme whereby students take part in national and community development projects (the "working term"). Adoption of this idea was partly influenced by the success of the campaigns run in the Soviet Union (the development of virgin lands, youth construction projects, etc.). At the same time steps have been taken to involve more students in sports and physical education classes, and there are 600 special scholarships for the best student sportsmen.

²⁹ This is typical of many Third World countries. In Latin America there are 50 per cent more students of the fine arts than there are of agriculture, stock breeding, etc.

³⁰ The Soviet Union helped with the building and equipping of the Higher Technological Institute in Bombay. Since its foundation it has granted 1,641 Bachelor's degrees, 898 Master's degrees, and 44 doctorates. In 1971 it had 2,100 students and 500 post-graduates (*New Times*, No. 5, 1971, p. 27).

³¹ In November 1970 85,000 engineers and technicians were registered unemployed (*New Age*, October 3, 1971, p. 18).

³² Agricultural education only really began to develop after 1956, when the training in this field was concentrated in 14 institutes, and the granting of degrees and diplomas was unified on a national scale with the help of the University Grants Commission and other administrative bodies. Post-graduate work is now being done in agricultural subjects, and refresher courses have been instituted. In 1968/69 92 higher educational establishments (around 13,500 students) were training agricultural specialists.

³³ Central government pays 50 per cent of total expenditure.

³⁴ It was intended to increase state expenditure on primary schools (by 78.5 per cent in 1966, and by 92.2 per cent in 1971), and partly

on incomplete secondary schools (by 32.2 per cent in 1966 and by 47.4 per cent in 1971).

³⁵ Cases of states' spending funds on the extension of secondary and higher education to the detriment of primary education faced the central government with the need to exercise stricter control over the opening of new institutions, and to make sure that they took the real needs of the country into account.

³⁶ Between 1950 and 1965 the salaries of various categories of teachers rose by 18 to 92 per cent, but during the same time prices rose by 61 per cent, which meant that the real wages of most teachers fell.

³⁷ *India*, 1970, p. 88. Unfortunately, the passing of the Act was not accompanied with the needed organisational and co-ordinating measures, which led to dissipation of funds appropriated for scientific development.

³⁸ Quoted from R. Avakov, V. Gavriluk, *Pokhishcheniye umov*, (The Brain Drain), Moscow, 1970, p. 86.

³⁹ On the Council's work see Z. Husain, "Development of Scientific Research in India and the Role of the Council of Scientific and Industrial Research", *Science and the Human Condition in India and Pakistan*, New York, 1968.

⁴⁰ The programme of national integration envisages deeper study of Indian culture and broad dissemination of its achievements.

⁴¹ H. Bhabha, "Indian Science; Two Methods of Development", *Development of Indian Science*, Bombay, 1966, p. 22.

⁴² P. C. Mahalanobis, "The Drama of Asia from the Point of View of an Indian", *Teorii ekonomicheskogo razvitiya osvobodivshikhsya stran Azii* (Theories of the Economic Development of the Liberated Countries of Asia), Moscow, 1970, p. 161.

⁴³ *Conference on the Application of Science and Technology to the Development of Asia*, Part II, *Messages addressed to the Conference*, New Delhi, August 9-20, 1968, pp. 16-17.

⁴⁴ *UNESCO Statistical Yearbook*, 1968, Geneva, 1969, p. 422.

⁴⁵ In November 1970 India's representative in UNESCO proposed the founding of a *World Children's Encyclopaedia* and a *History of World Civilisation* for young people.

⁴⁶ See also N. Yermoshkin and I. Suchkov, *Respublika Indiya. Pechat, radio, televideniye* (The Republic of India. Press, Radio, Television), Moscow, 1971.

⁴⁷ *Young India*, 1925, p. 387.

⁴⁸ It is written in the Constitution: "The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties..." *The Constitution of India*, Delhi, 1956, p. 27.

⁴⁹ *India*, 1969, New Delhi, 1969, p. 93.

⁵⁰ The development of secondary medical education is the responsibility of the state authorities, while central governmental bodies control higher medical education and refresher courses for specialists.

⁵¹ The problem of midwives is very acute, for the profession is considered unclean, and its work is only done by members of the lower castes. The majority of midwives are illiterate, which leads to high mortality of the new-born and of mothers. Nevertheless only around 15 per cent of women give birth in maternity homes, while the rest continue to resort to the services of local quacks.

⁵² For information on India's food situation see V. G. Rastyannikov, *Razvivayushchiesya strany: prodovolstviye i politika* (The Developing Countries: Food and Politics), Moscow, 1968.

⁵³ The last catastrophic epidemic was the influenza outbreak of 1918-1919, in which around 13 million people died.

⁵⁴ The first organiser of the Indian anti-plague service was an eminent Russian doctor Vladimir Khaffkine, after whom the Bacteriological Institute in Bombay is named.

⁵⁵ *UNESCO News Information Bulletin*, No. 12, December 1969, p. 6.

⁵⁶ P. Renu, *Gryaznoye pokryvalo* (The Dirty Coverlet), Moscow, 1960.

⁵⁷ P. Gascar, *Uoyage chez les vivants*, Paris, 1958, pp. 153-54.

⁵⁸ *Trud*, February 18, 1971.

⁵⁹ See: Y. N. Guzevaty, *Problemy narodonaseleniya stran Azii, Afriki i Latinskoi Ameriki* (Population Problems in the Countries of Asia, Africa and Latin America), Moscow, 1970, p. 127.

⁶⁰ See: K. Mukherjee, "Calcutta", *Education in Cities*, London, 1970.

⁶¹ *Za rubezhom*, No. 46, 1969, p. 19.

⁶² See K. G. Simonyan, "Some Aspects of Family Planning in India", *Sovetskoye zdoravookhraneniye*, No. 10, 1970, p. 58.

⁶³ In 1967-1968 1,800,000 such operations were performed.

⁶⁴ L. I. Brezhnev, *Report of the CPSU Central Committee and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1976, pp. 18-19.

NEPAL, BHUTAN, SIKKIM

The fall of British domination in India also affected the states of Nepal, Bhutan and Sikkim, located in the Himalayas, in the north of the Indian subcontinent. Although they formally were not colonies of Great Britain, British sovereignty plus their natural conditions and geographical remoteness from the outside world retarded their economic and cultural development.

Nepal

In the view of the Nepalese historian D. R. Regmi, the British intentionally did not include Nepal in British India; it was much more convenient for them to rule the country through the feudal Rana family, members of which occupied the post of Prime Minister for more than 100 years. British policy was based on the principle of isolating the country, which served as a permanent source of recruits for the army, stationed in British India.

The fall of the colonial regime in India was followed by political changes in Nepal too. Its artificial isolation was ended and ties with India, and then with other countries were strengthened and the so-called Ranocracy was abolished. The first steps were taken to bring about an economic renaissance and to develop national systems of education and health.

In the mid-fifties 96 per cent of the population were illiterate. By that time, true, some adult schools were already functioning, the setting up of which had been encouraged by Gandhi's ideas of the importance of spreading elementary knowledge and the inculcation of the simplest professional skills, but there were only 49 of them with 7,068 pupils. Even their increase to 912 in 1966 (22,800 pupils), and the opening of 25 specialised centres were not enough to solve the problem of eliminating illiteracy in a country with a population of 10,700,000 (1968 data). The system of education and the ponderous structure of school education also complicate the problem.

Nepal has four school systems: English, Sanskrit, Buddhist and Nepalese. The first, which is the commonest, has schools in five stages: two-year lower primary and primary schools and three-year higher primary, incomplete secondary and full secondary schools. Their curricula include the humanities and natural science subjects, and correspond to those of Indian schools in volume. Children are accepted irrespective of sex, caste, or religious affiliation.

The Sanskrit system of education is accessible only to Hindus and members of the upper castes. The main accent is on study of Sanskrit and its literary memorials. The Buddhist schools, as their name indicates, are usually attached to monasteries and train votaries of the religion. The Nepalese system has only elementary classes. In all these schools, with the exception of the Buddhist ones, teaching of Nepali and Nepalese literature and history has been introduced.

As a consequence of the multifarious nature of the system, the absence of centralised control (the host of private schools and the existence of monastery ones) and the charging of fees, the enrolment of school-age children was absolutely inadequate (20 per cent in 1965); and, according to 1969 figures, girls constituted only 15 per cent of the total number of primary pupils and 13.8 per cent of those in secondary education. The staff situation was also unfavourable,

only 22.5 per cent of the teachers being properly qualified.

At the beginning of the seventies Nepal had 6,630 primary schools, attended by 32.2 per cent of the children in the 6-10 age-group, and 841 secondary schools with 78,304 pupils but this means that only about 17 per cent of the children finishing primary school continue their education.

Nepal's system of higher education comprises 36 colleges with around 12,000 students, and a two-year university in Katmandu (opened in 1959) with four departments—Natural and Exact Sciences, the Humanities, Law and Commerce, to which college graduates are accepted. (Many Nepalese study abroad, mainly in India. In recent years there has been a strengthening of ties between Nepal and the USSR and other socialist countries; 266 Nepalese students were studying in the USSR in 1970.)

The university in Katmandu undertakes individual researches in the fields of agriculture, geology and physics. The Royal Nepal Academy, founded in 1957, does research into themes in language, literature, art and other humanities.

A modern health service is only beginning to be set up in Nepal. There is an acute shortage of qualified doctors and nurses. At the time of writing there were only around 1,000 hospital beds, of which half were in the capital. One of the best medical establishments, the Koiti Hospital, incidentally, was donated and equipped by the Soviet government.

Malaria (from which about 30 per cent of the population suffer), tuberculosis and various gastric and intestinal diseases are widespread. The unsatisfactory state of the sources of drinking water and low sanitary standards lead to outbreaks of cholera and typhoid. WHO and India have both extended considerable aid to the comparatively recently founded Ministry of Health.

Bhutan

Bhutan is one of the few countries in the world where a census has not yet been taken, and where there are no figures at all on the age composition of the population or on literacy. According to extremely approximate figures, Bhutan has about a million inhabitants (the basic nationality being Bhutanese). It is a backward country where feudal relations predominate and the way of life is much the same as it was in the sixteenth and seventeenth centuries. Civilisation is penetrating Bhutan very slowly, as attempts at modernisation are resisted by the feudal lords and the Lamaist clergy, who have great influence.

Nevertheless, Bhutan already has secular schools (100 primary and two secondary) and a teacher training college. It is intended in time to transfer all schools to the state and to introduce compulsory primary education. In the elementary classes the Bhutan language, Hindi, English, arithmetic, history and Buddhism are studied.

In recent years vocational schools have been opened to train people for local industry, which is making its first steps, and these already have as many as 15,000 students. More than 900 Bhutanese study in higher educational institutions in India, which, in accordance with an agreement made shortly after independence, gives Bhutan economic and cultural assistance. In 1970 the Kingdom of Bhutan became a member of the United Nations.

Sikkim

The population of Sikkim is estimated at 200,000, of whom around 90 per cent are illiterate. Lamaism has a great hold on its cultural development, with 67 monasteries and around three thousand monks. Despite the serious measures taken in the 1960s to extend education and to increase its accessibility, only 15,000 of the 35,000 school-age children go

to school (including a mere 2,000 girls). Despite aid by Indian educational bodies Sikkim has a great shortage of teachers, textbooks and school buildings.

At present there are 160 schools in Sikkim, one college and a vocational school, which trains artisans and qualified workers in carpentry, carpet-weaving, leatherwork and so on.

The only scientific establishment in the country is the Tibetology Research Institute in Gangtok, which has a very rich collection of manuscripts and xylographs. The Institute's workers prepare manuscripts for publication and translate them into English.

Since 1954 Sikkim has had several modern medical establishments, but it would be premature to talk of the development of a health system; the number of doctors is less than 20. Work on combating disease, especially malaria, is very weak.

Close ties with India, of which Sikkim was a protectorate until September 1974, when it became an associated state of the Republic of India, have had a beneficial effect upon the country's cultural and economic development.

PAKISTAN

Education and the Training of Cadres

From the very beginning the government of independent Pakistan had to face extremely complex social and economic problems,¹ linked with the need to reconstruct a backward multi-structural build-up, eliminate poverty and unemployment, and raise the extremely low productivity of labour, which all made it imperative radically to alter the qualitative composition of the labour force,² and train qualified specialists, though the realities of the situation gave no grounds for expecting an early solution of these problems.

The 1961 census was not at all heartening, with 79,385,191 illiterates and only 14,335,809 literates (or 19.2 per cent of the population), of whom 11,100,000 were men and 3,200,000 were women (Table 54).³ These figures, however, need qualification. Pakistani statistics included those who could read a simple text and understand it, but many of these could not write; and at least 14 per cent of these people could give no evidence of any education, i.e., were self-taught. The average figures for the country do not reflect the true state of affairs. In rural areas, for instance, the percentage of literacy did not even reach 13.6. Levels in West and East Pakistan were also not the same, due to the differences in their historical development and

Table 54

Literacy in Specified Age Groups, Pakistan, 1961

Age Group	Number of Literates			Per Cent of Population		
	Total	West Pakistan	East Pakistan	Total	West Pakistan	East Pakistan
All groups (over 5)	14,335,809	5,380,308	8,955,501	19.2	16.3	21.5
Men	11,406,646	4,260,586	7,146,060	28.0	23.9	31.5
Women	3,229,163	1,119,722	2,109,441	9.3	7.4	10.7
5-9 years	1,707,568	501,442	1,206,126	10.7	7.8	12.7
Men	1,159,141	376,930	782,211	13.9	10.9	16.1
Women	548,427	124,512	423,915	7.1	4.1	9.1
10-14 years	2,596,699	1,071,901	1,524,798	30.7	28.2	32.8
Men	1,869,045	812,420	1,056,625	39.7	38.7	40.5
Women	727,654	259,481	468,173	19.4	15.2	23.0
15-19 years	2,030,236	949,164	1,081,072	27.3	26.9	27.7
Men	1,501,078	735,809	765,269	39.1	38.4	39.8
Women	529,158	213,355	315,803	14.7	13.2	15.9
20-24 years	1,686,756	719,865	966,891	24.5	23.4	25.4
Men	1,284,184	570,876	713,308	37.1	34.9	39.1
Women	402,572	148,989	253,583	11.7	10.3	12.8
25 and above	6,314,550	2,137,936	4,176,614	17.7	13.3	21.2
Men	5,293,498	1,764,551	3,528,947	27.4	20.1	33.5
Women	1,021,352	373,385	647,967	6.2	5.1	7.1

Source: *Pakistan Yearbook 1971*, Karachi-Dacca, 1971, p. 37.

to some extent to differences in their religious composition (Table 55).

In 1970 there were about ten thousand adult education centres in the country, giving free instruction to six or seven hundred thousand people, mainly men. It was proposed to organise workers' literacy courses in state and private enterprises and put out special literature, but the finance available for these projects was quite unsatisfactory.

The problem of educational development as a whole was complicated in many ways by lack of the necessary resources and cadres. The considerable growth in the population also had an adverse effect. And when one takes into account the strong opposition of reactionary sections of the Moslem clergy and the general sharpness of class and national contradictions, the situation in which Pakistan introduced its programme of cultural change becomes obvious.

The declared aim of the country's leaders to achieve "Islamic socialism" was not backed up by measures that would correspond to the content of the proposed programme. To achieve "Islamic socialism" it was basic to create equal opportunities for all in a wider sphere, and not merely in the distribution of wealth. The three principles of equal opportunity: universal free elementary education, high quality of education in secondary schools and the provision of competitive employment at all levels, undoubtedly, had great attraction, but these slogans were based on ideas of class "harmony" which did not exist, and never could, in Pakistani society.

The school system evolved under British domination underwent no basic reorganisation during the first two five-year plans (1955-1965).⁴ It included primary schools (1st-5th classes), incomplete secondary schools (6th-8th classes), higher secondary schools (9th and 10th classes) and intermediate schools (11th-12th).⁵ With the exception of a few schools education of the sexes, as a rule, was separate.

Table 55

Percentage Distribution by Religious Group
(1961 Census)

Group	Total	West Pakistan	East Pakistan
Moslems	88.09	97.17	80.43
Hindus	10.67	1.45	18.45
Christians	0.78	1.36	0.29
Buddhists	0.4	0.01	0.74
Miscellaneous	0.06	0.01	0.09

Source: *Pakistan Yearbook, 1970*, p. 36.

Pre-school establishments catering for children from three to six were all private.

The third five-year plan paid much attention to educational problems, above all to quality.

Government authorities considered that fulfilment of the planned proposals should be a breakthrough in development of the school system. The aims of reorganisation were clearly formulated as follows: 1) to create a system which would bring about the transition to the age of science and technology, promote political, social and economic development and bring the cultural and spiritual level of the country into line with demands of the modern world; 2) to create conditions in which the youth of the country would be able to develop their all-round individual abilities; 3) to raise the level of education at all stages so that it could fulfil to the utmost its function in national construction.⁶

The appropriate increases were made in expenditure (Table 56), but the Indo-Pakistani military conflict in 1965, and the sharp increase in expenditure on military needs, forced the government in March 1967 to reduce the funds previously allocated to education from 3,230 million rupees to 2,374 million.

The cut in funds affected primary schools most of all. Instead of the 520 million rupees earmarked for their

Table 56

Distribution of Appropriations for Education in the First, Second and Third Five-Year Plans (mln rupees)

	First Plan		Second Plan		Third Plan	
	Total sum	Per cent	Total sum	Per cent	Total sum	Per cent
Primary education	74	20	101	9	520	20
Secondary education	72	19	183	17	615	23
Teacher training	9	2	70	6	138	5
Technical education	22	6	260	24	637	23
Higher education	100	26	280	25	448	15
Scholarships	5	1	93	8	198	8
Sundries	98	26	115	11	674	6
Total	380*	100	1,102	100	3,230	100

Source: *Third Five-Year Plan of the Republic of Pakistan (1965-1970)*, p. 239.

* Actual expenditure was only 230,000,000 rupees.

development, only 319 million were actually spent, which naturally prevented fulfilment of the plan to build more primary schools.

Official Pakistani statistics for 1967-1968 indicated that 5,100,000 children were attending primary school in East Pakistan (69.1 per cent were boys),⁷ which constituted 48.5 per cent of the age-group. The figures for West Pakistan were even lower, with 2,600,000 (77.7 per cent were boys), or 34.4 per cent of the age-group.⁸ It was proposed to increase enrolment considerably by 1970 to 70 per cent of the age-group, which would have required the modernisation of 26,000 existing schools and the opening of 45,000 new ones. In an attempt to ease the problem slightly, the authorities intended to introduce a two-shift system, to use mosques for "secular" lessons (something very unusual for a Moslem country), and to direct a number of private firms and industrial enterprises to organise courses for the children of their staff.

By 1970 the number of primary schools had risen to 70,040, and of pupils to 10,500,000 (51 per cent of the age-

group), which meant that the planned figures had been fulfilled by 70 per cent in East Pakistan, and by 37 per cent in West Pakistan.⁹

The inequality in the distribution of schools among the different provinces (Table 57), the limited resources, the slow rebuilding of village schools, the low standard of living of the population, and the unwillingness of parents, arising from this, to let their children go to school (preferring them to work in the fields) have retarded the development of primary education. The effectiveness of the administrative measures was reduced by the high drop-out of pupils. In 1963/64 only 30 per cent of all the school-beginners reached the 5th class in East Pakistan, and 48 per cent of the total in West Pakistan (Table 58). Drop-out has long ceased to be a purely "educational" problem, and has grown into a social and economic one. In that connection there arose the idea of introducing the elements of agriculture and the handicrafts prevalent in the particular area into the curricula of 4th and 5th classes in village schools, so that children would have acquired at least the minimum of the skills they would need in practical life by the time they had completed their education.

The unfavourable situation in primary education led the Pakistani government to adopt proposals for a New Educational Policy in 1968. "It is now widely accepted that the greater factor in a nation's economic progress," this document stressed, "is the quality of its manpower resources, which can be improved through education. For a country like Pakistan, with few discovered minerals and other resources, education assumes an even larger importance. It is therefore necessary that education should not merely be treated as a social service but should be regarded as a necessary 'Investment in Man' without which real economic progress is difficult. . . . It is considered that for national development purposes, the first priority of education should be to create a literate society. . . . Literacy . . . firstly, helps to bring about changes in social attitudes, such as contempt

Table 57

Number of Educational Institutions and Students in Pakistan 1967/68

Institutions	Total	Including those in		Total students	Including those in	
		West Pakistan	East Pakistan		West Pakistan	East Pakistan
Primary schools (1th-5th classes)	64,850	36,400	28,450	8,500,000	3,580,000	4,920,000
Secondary schools (6th-8th classes)	4,890	3,460	1,730	1,510,000	805,000	705,000
Higher, secondary and intermediate schools (9th-12th classes)	5,060	1,890	3,170	583,000	293,000	290,000
Secondary vocational	346	152	194	40,700	24,000	16,700
Special	80	27	53	8,012	1,075	6,937
Others	1,929	629	1,300	224,572	30,177	194,395
Colleges of the humanities and natural sciences	508	287	221	106,000	55,500	50,500
Professional colleges	77	48	29	28,645	20,875	7,770
agricultural	5	4	1	1,530	1,300	230
commercial	8	6	2	4,300	3,400	1,200
engineering	6	5	1	3,550	3,300	250
fine arts	2	1	1	430	270	160

Table 57 (continued)

Institutions	Total	Including those in		Total students	Including those in	
		West Pakistan	East Pakistan		West Pakistan	East Pakistan
domestic science	4	3	1	1,380	1,200	180
law	14	7	7	5,750	3,700	2,050
medical	13	7	6	7,200	5,000	2,200
teacher training	18	11	7	3,800	2,600	1,200
physical education	2	1	1	305	175	150
social work	1	—	1	110	—	110
Universities	12	7	5	24,409	14,425	9,984
general	8	5	3	17,757	10,068	7,689
agricultural	2	1	1	3,050	1,980	1,070
engineering	2	1	1	3,400	2,050	1,350

Source: *Pakistan Yearbook, 1970*, p. 345.

Table 58

Drop-out in Pakistani schools (percentages)

Year of entry	Province	Classes									
		I	II	III	IV	V	VI	VII	VIII	IX	X
1957/58	Eastern	100	44	28	23	18	12	11	10	9	9
1957/58	Western	100	65	56	48	42	24	20	18	16	14
1963/64	Eastern	100	49	41	39	30	—	—	—	—	—
1963/64	Western	100	75	64	56	48	—	—	—	—	—

for manual work. . . . Secondly, it raises labour productivity by facilitating the acquisition of analytical and technical skills. . . . The proposed educational plan therefore places the maximum emphasis on elementary education so that illiteracy may be eliminated at the source."¹⁰

The New Educational Policy envisaged increased attention to the education of young people in the spirit of the official Islamic ideology, and the curricula of primary schools adopted at the end of the sixties naturally gave religion a considerable place (Table 59). Islam (and Hinduism, Buddhism, or the elements of the Christian gospel, depending on the belief of the pupils) became a compulsory subject, and the government constantly called for a deeper study of it. At the same time the requirements in teaching general subjects were raised and they were even introduced into the traditional Moslem schools.

The secondary school faced more or less the same problems. Although the number of pupils increased by nearly 200 per cent between 1951 and 1970, and enrolments in classes 6th to 8th increased to two million, not more than 25 per cent of the age-group was reached, and not more than 17 per cent passed the final examinations.¹¹ East Pakistan was particularly backward owing to the discriminatory policy of the central government.

Table 59

Timetable and Subjects in Primary Schools

Subjects	1st and 2nd classes (lesson 30 min)			3rd class (lesson 40 min)			4th-5th classes (lesson 40 min)		
	lessons per week	hours per week	hours per year	lessons per week	hours per week	hours per year	lessons per week	hours per week	hours per year
Language*	15	7.5	282	11	7.33	275.66	11	7.33	275.66
Elementary mathematics	6	3	112.5	6	4	150	6	4	150
Natural sciences	3	1.5	56	3	2	75	3	2	75
Social sciences	—	—	—	4	2.66	100	5	3.33	125.33
Physical education	6	3	112.5	4	2.66	100	4	2.66	100
Religion	5	2.5	94	4	2.66	100	4	2.66	100
Applied art	10	5	187.5	4	2.66	100	4	2.66	100

* In East Pakistan—Bengali, in West Pakistan—Urdu, Sindhi and Pushtu, and in some schools English.

In recent years secondary education has been reorganised in accordance with the recommendations of the Education Commission. The need for reorganisation was governed by the fact that secondary schools in the main supply cadres for industry, agriculture, commerce, etc.

Things, however, proceeded very slowly. The majority of pupils in higher secondary schools in 1967/68, as Ministry of Education figures show, were studying in institutions with a bias (especially in the Eastern province) towards the humanities:

	West Pakistan	East Pakistan
The humanities	67.1	80.9
Natural sciences	30.1	14.8
Commerce	1.2	3.3
Industry	0.4	0.3
Agriculture	0.6	0.4
Domestic science	0.5	0.3

The position has altered little since then, as the programme which has been in force since 1968 indicates (Table 60), although its revision, the publication of experimental textbooks and the introduction of optional subjects should make it easier to solve the problem. One must not forget, however, such a negative factor as the inadequate democratisation of the secondary school. Fees are charged, and are fairly high. In addition many schools are private foundations, in which elitist ideas of education are still very much alive. The successful reform of the school system depends not only on improving curricula and the technical equipment of schools, but also on the supply of teachers and the quality of their training.¹²

	Primary schools	Secondary schools
1950/51	87,647	44,966
1960/61	130,545	58,815
1962/63	150,163	69,226
1964/65	171,973	82,555
1969/70	350,000	120,000

For a number of reasons the plan was not fulfilled. According to the Ministry of Education, there were 198,000 teachers in male primary schools (one teacher to 53 pupils) in 1970, and 24,000 in female schools (one to 131). To go over to the new curricula the secondary schools needed another 35,000 teachers.

The problem of the quality of teacher training has been even more difficult. According to far from complete figures, 38 per cent of the primary school teachers in East Pakistan and 11 per cent in West Pakistan did not have the necessary qualifications. This is partly explained by the fact that the growth in the number of pupils forced the administration to give priority to quantity and make sure that schools had full staffs. Without doubt they were also prevented from making the best choice of teachers by the very low pay for the job, teaching being one of the lowest paid professions for the intelligentsia.¹³

The education of girls remained a very important problem giving cause for concern. The ratio of girls to boys in primary and secondary education was 1:3 and 1:6 in 1965. This shows how slow religious and social prejudices are disappearing, though it had already been proposed at the beginning of the sixties, albeit in very cautious terms, to re-examine the traditional interpretation of some of the Koran's writ and to recognise the right of women to take part in the economic life of the country. But the founding of co-educational schools, the drawing of women into teaching, and the help of women's organisations did not yield tangible results. The experience of a number of Moslem countries (Turkey, Afghanistan) permits one to state that these problems can only be solved by government measures.

Vocational education. The third five-year plan posed the improvement and extension of the training of skilled workers as a task of national importance, which expressed the needs of economic development and aimed at closing the gap between the demand for skilled workers and their actual

Table 60

Timetable and Curriculum in Secondary Schools

Subjects	Classes 6th-8th		Classes 9th-10th		Classes 11th-12th	
	Lessons per week	Per cent of study time	Lessons per week	Per cent of study time	Lessons per week	Per cent of study time
Compulsory						
Urdu or Bengali	8	17	6	13	6	17
English	8	17	9	20	8	23
Social sciences	5	11	4	9	—	—
Mathematics	7	15	6	13	—	—
Natural sciences	5	11	5	11	—	—
Religion	3	6	—	—	—	—
Physical education	2-3	6	3	6	2	6
Arts and crafts	4	8	—	—	—	—
Handiwork	72*					

Table 60 (continued)

Subjects	Classes 6th-8th		Classes 9th-10th		Classes 11th-12th	
	Lessons per week	Per cent of study time	Lessons per week	Per cent of study time	Lessons per week	Per cent of study time
Optional**						
Arabic, Bengali, Gujarati, Urdu, Pali, Punjabi, Pushtu, Persian, Sanskrit, Sindhi, dancing, music and art	3-4	9	—	—	—	—
Commerce subjects or social sciences	—	—	13	28	—	—
Agriculture, technical subjects, domestic science	—	—	18	39	—	—
Social and natural sciences, military arts, languages, technical subjects, Islam, agriculture and medicine	—	—	—	—	18	52

* Per year

** One or two of these subjects in 6th-8th classes, and one from each group in the remaining classes.

supply, when there was a surplus of free labour power. Control of vocational schools was transferred to the Ministry of Education.

Fulfilment of the programme for training cadres with medium-level qualifications was left to the fourth five-year plan. By 1970 there was a noticeable influx of students to intermediate classes and an increase in enrolments in secondary (three- and four-year) vocational schools (Table 61) which were intended to meet the needs, mainly of the West Pakistan economy, for medium-level specialists. Anyone could enrol in them who had completed 8 to 10 classes in a general school.

Schools training technical personnel for industrial projects, above all in the new branches of industry, became the object of special concern by the educational authorities. The commercial colleges introduced courses in 1970 for managers in industry and commerce based on up-to-date management methods.

The need for specialists familiar with the latest agro-techniques prompted extension of the network of agricultural schools. Whether Pakistan, basically an agricultural country, could solve its food problem and free itself from the need to import grain, depended in some measure on providing agricultural specialists. Although agricultural growth rates reached 6 to 8 per cent by the end of the sixties, the planned quotas for grain production were not met (East Pakistan especially lagging behind).

There also was an increase in the number of three-year schools for nurses (there being more than 30 at the time of writing) and of educational colleges training teachers for primary, incomplete secondary, and vocational institutions.

Higher education is provided mainly by the universities, both General Universities and specialised ones. The first include the two oldest institutions, the University of Punjab (founded in Lahore in 1882) and Dacca University (1921), and more recent ones, Hyderabad (1947), Peshawar (1950),

Secondary Vocational Education
1959-1970

Table 61

Year	Number of students in vocational establishments							
	Total	including girls	agricultural	commercial		technical	the arts	
				total	girls		total	girls
1959/60	21,339	3,687	341	1,390	38	1,228	32	3
1964/65	32,399	6,650	425	2,452	14	237	49	3
1965/66	33,586	5,546	345	3,090	33	101	230	74
1966/67	37,213	7,042	350	3,925	35	170	241	31
1967/68	40,700	7,820	375	4,600	35	185	240	35
1968/69	44,600	8,585	400	5,125	35	200	275	50
1969/70	48,600	9,200	450	5,850	35	200	300	65

Table 61 (cont.)

Year	Number of students in vocational establishments					
	Industrial		teacher training		medical	
	total	girls	total	girls	total	girls
1959/60	8,916	2,467	7,836	1,318	1,426	41
1964/65	14,053	3,567	15,133	3,075	—	—
1965/66	15,499	3,086	14,321	2,353	—	—
1966/67	19,092	4,508	13,435	2,568	—	—
1967/68	20,900	4,900	14,400	2,850	—	—
1968/69	23,000	5,300	15,600	3,100	—	—
1969/70	25,000	5,700	16,800	3,400	—	—

Source: the Bureau of Education (Islamabad).

Karachi (1951), Rajshahi (1953), Islamabad (1966), Chittagong (1966) and Quetta (1970).¹⁴ Of the second type, there are two agricultural universities, Lyallpur and Mymensingh, and two engineering universities in Dacca and Lahore. In 1969/70 Pakistan's universities had more than 30,000 students.¹⁵

The universities trained graduates in various disciplines, including the pure sciences, and awarded Master's and Doctor's degrees, supervised teaching in the colleges subordinated to them and sat their examinations. Their standards were no different from those of the best universities of other Third World countries, and were the special concern of the organisations controlling higher education.

The universities have received great help from the state. The central government covers more than 70 per cent of their expenditure, and the provincial authorities and private individuals and firms also help. New lecture blocks, laboratories and libraries have been opened.¹⁶

Higher education has been undergoing a reorientation, however slowly it may have been. In the decade 1960-1970 there was a certain fall in numbers of the humanities students, and the development of agricultural education was given a fillup. At the end of the sixties there were 7,141 students in this field—3,072 in the two agricultural universities, 3,259 in four colleges, and 810 in the animal husbandry college in Lahore.¹⁷ The universities provided facilities for post-graduate work. The standard of teaching in the agricultural colleges (Tajgaon in East Pakistan, and Tando Jame and Peshawar in West Pakistan) has risen. In 1966/67, in West Pakistan, the training of teachers at General Farming courses for secondary schools in rural areas was organised.¹⁸ Eighty short-term refresher courses provided for the retraining of agronomists, veterinary surgeons, and mechanics.

Pakistan began training her own qualified engineers for practical work and research in technology with the opening of two engineering and technological universities in 1961. By 1968/69 there were also six engineering colleges, four in West Pakistan and two in East Pakistan, catering for 6,928 students.

The training of medical cadres has been expanded. In 1967/68 7,200 students (including students of pharmacy and dentistry) were studying in 13 colleges attached to clinics.

Karachi and Lahore had hospital facilities for practical experience in therapy, sanitation and hygiene.

Attention has been paid in recent years to the physical education of the young, and school curricula included a course of personal hygiene and physical education. The universities have been provided with gymnasiums, playing fields and swimming pools. The press and radio constantly campaigned for "physical perfection of the nation".

Higher education involved fairly high fees; students had to pay not only for lectures, but also to sit examinations and for the use of laboratories and libraries. The number of scholarships was very small so that students from the worse-off classes were obliged to find parallel work in addition to their studies. In reality higher education was confined mainly to children of comparatively well-off families, and nothing realistic was done to confirm its "accessibility" proclaimed by the political leadership. Students were a serious political force in the movements of 1968-1971 in East Pakistan, taking part in demonstrations calling for political reform, for the release of arrested opposition leaders, for democracy in education, improvement of the economic position of teachers, and for guaranteed work for graduates. As a result of the events of 1971 higher educational establishments in East Pakistan lost most of their lecturing staff. Teaching institutions suffered great damage, their laboratories being destroyed and equipment stolen.

Development of Research

Until 1947 on the territory of Pakistan there were no major research centres, so that Pakistani science in fact only began to develop after independence. The Pakistan Academy of Sciences was founded in 1953, and the conduct of research was entrusted to institutions set up in 1960, namely, the National Science Council and other government laboratories, and the universities, which became the main

Table 62

Number of Professional Scientists
and Engineers Employed in 1966

	in government activities	in institutions of higher education	in other employment	total
Natural sciences	2,563	1,539*	1,002	5,104
Engineering	692	376	3,421	4,489
Medical sciences	295	634	15,571	16,500
Agriculture	311	640	463	1,414
Total, all sciences	3,861	3,189	20,457	27,207

Source: *Conference on the Application of Science and Technology to the Development of Asia*, Part II, New Delhi, 1968, p.31.

* Estimated.

base for research and training of scientific personnel (Table 62).¹⁹

Overall government control of development was exercised through the Department of Scientific and Industrial Research under the Presidency. The Department was given great powers and functioned in close contact with Pakistan's major scientific organisations.

Within the jurisdiction of the National Science Council, which co-ordinated plans and programmes of scientific activity and made suggestions for applying results in practice, there were the following institutions: the Pakistan Council of Scientific and Industrial Research, the Pakistan Agricultural Research Council, the Pakistan Atomic Energy Commission, the Pakistan Council for Irrigation, Drainage and Flood Control Research, the Pakistan Medical Research Council and the Council for Works and Housing Research.

The Academy of Sciences and various societies, councils and associations (the Pakistan Historical Society, the Geographical and Sociological associations, the Council for

Developing Urdu and Bengali, etc.) played a certain role in the reorganisation of Pakistani science.

The main task of research has been recognised as helping to solve the food problem, and in that connection increasing the productivity of all branches of agriculture. In addition a programme was planned for desalination of sea water and the irrigation of desert areas in West Pakistan.

Study of energy resources was the basis of research aimed at promoting industry.

Scientific work in the medical field has been directed towards eradicating epidemic diseases and the tropical diseases peculiar to Pakistan. With the help of international organisations an anti-cholera centre and the Malaria Institute of Pakistan were set up in Dacca, a medical research centre for training Masters and Doctors of Science, the National Health Centre in Islamabad and the National Research Institute of Family Planning in Karachi.

Government expenditure on scientific development was only 0.13 to 0.17 per cent of the national income, and was estimated at 77 million rupees (1966-1967). Private capital did not make any substantial contribution, though it did finance some applied research in fields in which it was interested. In several cases research projects were also financed by international organisations and by private foundations in imperialist countries. In general resources were directed into research in the Western province.

Mass Media

According to the data for October 1969, Pakistan published more than 1,000 newspapers and magazines (108 dailies, 302 weeklies, 117 fortnightlies and 522 monthlies) in various languages (in the state languages, Urdu and Bengali, and in English, Beluchi, Pushtu, Punjabi, Sindhi and Gujarati). There were three news agencies with branches in various parts of the country and abroad. The content of the press

and of radio broadcasts was strictly controlled by governmental bodies.

The central radio station was in Islamabad, the bigger stations in the Western province were located in Karachi, Hyderabad, Lahore, Rawalpindi, Quetta and Peshawar, and in the Eastern province in Dacca, Chittagong, Rajshahi, Sylhet and Rangpur. Since 1969 the central radio station has given daily broadcasts for schoolchildren in 6th to 9th classes (two programmes of 15 minutes each); the provincial stations have also given time to regular educational programmes, particularly a programme of farm education, organised by the ministries of Information and Agriculture. There have also been programmes for the illiterate on sanitation and hygiene, family planning and agriculture.

The first television stations were opened in Lahore and Dacca in 1964, and later two more in Rawalpindi and Karachi. The equipment of these stations was supplied by Japanese firms which, until recently, also helped run and finance them. A Television Institute training staff for work in television was founded in January 1967.

The film industry has also had considerable development, producing 450 documentary films and shorts and around 200 feature films a year.

Health Protection

In the first years after independence, Pakistan's health service was in a very bad condition. There were not more than 3,500 doctors for a population of 72 million, and there was only one medical college and four schools training junior medical staff. The situation was especially severe in the rural areas of East Bengal. Insanitary conditions and the inadequate provision of sources of drinking water gave rise to regular epidemics. In 1952, according to official figures, about 95,000 people here died of malaria. "Widespread disease . . . poor medical services and repulsive living condi-

tions," a Pakistani economist wrote, "have combined to produce a drastic lowering of labour efficiency in all the main areas of the economy."

Despite limited funds and resources, the first five-year plan (1955-1960) therefore allocated 288 million rupees, or 3.1 per cent of total expenditure, to the development of public health; but only 50 per cent of the planned sum was actually used.

The results of the Second Plan (1960-1965) give evidence of certain progress. The number of doctors rose to 15,600 (against a planned 13,000), and the number of hospital beds went up to 33,000 (against 28,000 in 1960-1961). Three medical colleges were opened during the period, and by 1966 there were twelve. Vaccination in East Pakistan resulted in the number of smallpox cases being reduced from 79,000 in 1958 to under 50,000 in 1964. In 1960-1961 a special council opened a campaign to wipe out malaria within 14 years.

Nevertheless the situation as before remained disturbing. According to incomplete statistics every year 150,000 people contracted tuberculosis and 100,000 malaria. There were nearly 100,000 lepers and about half a million blind persons (blindness having increased owing to the absence of the necessary measures to combat eye diseases and to the fact that the sick did not observe the elementary rules of personal hygiene). The foci of smallpox and cholera have not been wiped out, and there were outbreaks of cholera in 1968 and 1970.

Poor nutrition increased susceptibility to diseases, particularly gastric (investigations revealed that the calory content of food in a number of areas of the country was less than the critical norm of 2,250 calories a day established by the UN Food and Agricultural Organisation). Infant mortality was high, and there was an acute shortage of medium-level medical staff (in 1965, for example, there were only 700 nurses to 6,700 doctors in East Pakistan).

"Our resources," ran the introduction to the third five-

year plan, "do not permit us to provide the population with the forms of medical and social services which exist in Great Britain and Sweden at present. We are fully determined, however, that over the period of operation of this plan we shall achieve the situation whereby the greater part of the population will receive medical attention."

The government programme envisaged laying the basis of a united state health system, built on a rural health centre serving 60,000 people, an increase in the number of such centres and their reinforcement with medical personnel,²⁰ the opening of two or three medical stations, laboratories and other services in districts, with the appropriate personnel, and the taking of special measures to protect the health of children, mothers and industrial workers.

Measures against tuberculosis were also planned. It was estimated that it would be necessary for this to build 1,900 clinics (one clinic to 100,000 inhabitants) over 20 years. And it was proposed to bring the rural medical stations into the national anti-tuberculosis campaign. The campaign against malaria was to be continued, and a more active attack made upon leprosy with the opening of five clinics (in Rajshahi, Mymensingh, Chittagong, Khulna and Barisal) and four mobile polyclinical units.

This programme, however, was only partially fulfilled, since only 638 million rupees out of the 901,000,000 allocated for the development of health, were actually spent. However, as the following figures show, there was a certain increase:²¹

	1965 ²²	1970 ²³
Doctors	15,600 ²³	19,800 ²³
Nurses	3,600	5,400
Hospital beds	35,500 ²⁴	48,300 ²⁴
TB clinics	96	181
Number of TB beds	2,500	3,450
Women's consulting centres	1,047	2,750
Rural health centres and medical stations	200	860
Medical colleges	12	14

At the end of the 1960s a system of free medical attention had been partially introduced for civil servants and for the poorest strata of the population, which was intended in the future to lead to extension of medical services to the mass of people. At the same time a health programme for industrial workers was put into operation. The 1934 Factory Act (which contained some elements of labour protection) was not being observed, as the Pakistani administration admitted, and the 1962 Act on Accident and Sickness Insurance had not in reality been implemented by the provincial governments.²⁵

Although the work of the Central Malaria Eradication Board did not as yet cover all regions of the country, in those areas where it did operate the number of foci was reduced.

But these, of course, were very relative successes. The rural areas are still very short of doctors; and one doctor in the countryside has to deal with ten to twenty thousand people, against 700 in the towns. There is a shortage of medium-level medical staff (one nurse to four doctors, whereas there are two nurses to every doctor in the industrially advanced countries), and quacks and untrained midwives practise in the villages. Infant mortality is falling only slowly.

Family planning. In the sixties population growth was 3 per cent per annum (against 2.3 per cent in 1951-1961), and in 1970 the population had reached 132 million, according to official estimates. The age composition had also altered, 42-47 per cent of the population being under 15 years of age, which aggravated the already serious food problem (since children need fewer calories, but more good-quality protein food and vitamins).

Economic growth rates, as a result of the backwardness in agriculture, had been very low for many years, especially in East Pakistan. Between 1950 and 1960 the national income increased by 28 per cent, but the increase practically had no tangible effect, since on a per capita basis it had

remained stable (295 and 298 rupees respectively), and only by 1965 did it reach 330 (with an average annual increase of 2 per cent between 1960-1965) and in 1969 up to 550 rupees. Attempts were made to avert the threat that the vital task of the plan, that of tripling per capita income, would not be fulfilled; the solution was seen in lowering the birth rate from 55 to 35 per 1,000. It was assumed that since the death rate had been reduced from 29 to 15 per 1,000, the task would be to reduce average annual population increase to 2 per cent by 1985.

As the family planning programme encountered certain resistance from traditionally biased sections of society, a special department was even set up and 54 family planning clinics, 1,230 rural centres, etc., were opened. Attention was also paid to propaganda. By 1969 the birth rate had fallen to 43.

* * *

Since independence certain changes have taken place in the social and cultural development of Pakistani society, in particular as concerns the sphere of education and health. Many of the programmes in these spheres directly met the needs of the bourgeoisie for literate and professionally trained personnel. On the whole, however, the progress made must be recognised as very modest. There was really no other possibility. The basic problems associated with the need to liquidate the colonial structure of the economy and build up an independent national economy, to overcome inequalities in the economic development of West and East Pakistan and to improve the material situation of the broad masses were still unsolved.

The complexity of those problems, which arose as soon as Pakistan was formed, was due to the fact that the division of former British India gave Pakistan backward agrarian regions, that old economic links were broken and that there was no clear idea of the path of future development. The

ruling circles of the new state represented the interests of the feudal landowners and the big bourgeoisie and did not strive to democratise political life or bring about progressive changes, and encouraged the activity of private capital, which was striving to occupy a leading position in industry, banking and insurance. Monopolists were given immense opportunities to influence the political situation in the country, to suppress the democratic movement and to determine the direction of the country's foreign policy, which led to a strengthening of Pakistan's ties with imperialist countries and her joining the SEATO and CENTO military blocs. These groups followed a discriminatory policy in relation to the Eastern province, to which only 37 per cent of budget appropriations were assigned during the first three five-year plans, although nearly 60 per cent of the population lived there.

The reforms begun by Ayub Khan's government after 1958 were aimed at activating the country's advance along the road of capitalist development, at creating conditions for the development of private enterprise (as before, preserving advantages for the West Pakistan bourgeoisie), at reducing the discontent of the middle strata, and at breaking up the national democratic front.

Some changes took place in this period, those in agriculture accelerated the penetration of capitalist relations into the countryside. Industry developed comparatively quickly, including the sector vital to the economy, heavy industry. There was a marked movement away from a one-sided orientation on Western states and a broadening of co-operation with countries in the socialist camp. There was a certain increase in the standard of living of the masses, though as to the main indices (per capita national income, calory-value of food, housing, etc.) it was still one of the lowest in the world.²⁶

The development of capitalism in Pakistan gave rise to new problems caused by the sharpening of contradictions between the big bourgeoisie, on the one hand, and the

middle and petty bourgeoisie, on the other (especially in East Pakistan), and by the growing opposition mood in various social groups in East Pakistan because of the slow liquidation of its backwardness. There was a sharp increase in the activity of workers in demanding improved living and labour conditions. Their actions were supported by students, minor civil servants and teachers, and coincided with peasant disorders in separate areas. Slogans calling for democratic transformations and the introduction of parliamentary forms of government gained in popularity among very broad sections of the people. In this tense atmosphere a change of government occurred, and on March 25, 1969, Ayub Khan handed over power to the military authorities; but they, too, naturally were unable to solve these "tender" problems.

For East Pakistan 1971 was a tragic year. Despite the assurances of Yahya Khan's government that the results of the country's first elections (December 1970) would be honoured, and that a National Assembly would be called, the military administration broke off negotiation on March 25 with the leader of the Awami League, Sheikh Mujibur Rahman, on the subject of the future state structure, and arrested him and other East Pakistan leaders. Tanks and aircraft fired on the peaceful Bengali population, killing and wounding hundreds of thousands of innocent people. Bloody terror reigned throughout the province. Around ten million people fled to India to escape the excesses of the army and persecution by the police. A partisan struggle broke out in East Pakistan, and the government of Bangladesh was formed. The national movement of the Bengali people was crowned with success, and on December 16, 1971 (now celebrated in Bangladesh as Victory Day), the People's Republic of Bangladesh was proclaimed as a new independent state.

Pakistan is now seeking the way out of serious crisis. Zulfikar Ali Bhutto, who assumed the post of President in December 1971, has stressed the need to effect changes in the

economic, social and cultural fields, to work out the fundamentals of new labour legislation, and to carry out a land reform.

In a radio and television address on March 15, 1972, President Bhutto announced a reform of the education system.

"Ever since we gained independence," he said, "education has remained almost the most neglected sector in the body politic of our country. For a long time, the obsolete idea of producing an educated class from amongst the privileged few ... remained the cornerstone of our educational system. ... We have got to change education from an élite privilege to an equal expectation. This opportunity belongs to every citizen regardless of race, religion or sex; regardless of origin or birth."²⁷

The reform envisages democratisation of the education system, eradication of illiteracy and re-examination of curricula in incomplete and complete secondary schools with the aim of giving them a vocational content. Free education has been introduced in classes 1st to 10th in 1972-1973. It was also intended to give all boys primary education by the end of the 1970s, and all girls by 1984.

Private schools and colleges have been nationalised (without compensation), and the working conditions and pay of their teachers brought into line with those in state schools. Privileged establishments are being turned into schools for gifted children, who can study in them irrespective of their parents' economic or social position.

By 1980 10,000 literacy centres should be functioning. A People's University has been founded with the task of organising education through correspondence courses, consultations, television, and the other mass media. With the aim of educating adults and getting school education going in remote areas, a National Corps has been set up in which young people from 17 to 23 serve for one year. It was also intended to set up five boarding schools mainly for children from remote areas in the near future.

The changes also affect higher education. It was proposed to set up a Government Commission on University Management, to reorganise the running of universities and to bring students and lecturers into the university councils. It is also planned to increase the number of universities to 16 by 1980, building new ones in Saidu, Multan and Sukkur. Several colleges are also to be granted university status.

The programme of educational reform provided for the establishment of a state publishing organisation, the opening of 50,000 libraries in town and country, and measures to develop sport. Expenditure on education doubled in the first year of the reform, and should increase by 15 per cent every year. In the scale of the tasks envisaged and the obvious trend toward democratisation of education, the programme differs considerably from the earlier ones.

In its foreign policy the government of Pakistan has taken steps to achieve mutual understanding and establish friendly relations with the countries of the South Asian subcontinent. On his visit to Moscow (March 16-18, 1972), President Bhutto again emphasised that the development of good-neighbourly relations between Pakistan and the Soviet Union was in the interests of their peoples, and would promote the development of lasting peace in Asia and throughout the whole world.

¹ Pakistan's social, economic and political development has been analysed by many Soviet authors, among whom we note the following: Y. V. Gankovsky and L. R. Gordon-Polonskaya, *Istoria Pakistana* (The History of Pakistan), Moscow, 1961; Y. V. Gankovsky, *Natsionalny vopros i natsionalniye dvizhenia v Pakistane* (The National Question and National Movements in Pakistan), Moscow, 1967; V. G. Rastyanikov and S. A. Kuzmin, *Problemy ekonomiki Pakistana* (Economic Problems of Pakistan), Moscow, 1958; Y. V. Gankovsky and V. N. Moskalenko, *Politicheskoye polozheniye v Pakistane* (The Political Situation in Pakistan), Moscow, 1960; V. N. Moskalenko, *Problemy sovremennogo Pakistana* (Problems of Present-Day Pakistan), Moscow, 1970. See also the articles: Y. V. Gankovsky, "Events in Pakistan", *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 6,

1969, and "The First General Elections in Pakistan", *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 4, 1971, etc.

² Transformation of the labour force was specially studied at the 6th Asian Regional Conference of the ILO (Tokyo, September 1968). See: *The Report of the Director-General. Human Resources Development: Objectives, Problems and Policies*, Geneva, 1968, Ch. III.

³ The table does not include children under five years of age.

⁴ The author has given more details in his article "Education and Cadre-Training in Pakistan", *Narody Azii i Afriki*, No. 2, 1969. See also F. G. Volokhonskaya, "Education in Pakistan" (A synopsis of a Candidate dissertation), Tashkent, 1970; R. M. Mukidjanova, "Pakistan", in *Prosveshcheniye i podgotovka kadrov v stranakh Vostoka* (Education and Cadre-Training in Countries of the East), Moscow, 1971.

⁵ After finishing 10th class pupils sit examinations and are awarded a matriculation certificate. The intermediate classes prepare pupils for higher education with a certain amount of specialisation, in which the accent is on the humanities and technical and scientific disciplines.

⁶ *The Third Five-Year Plan of the Republic of Pakistan (1965-1970)*, p. 207.

⁷ The discrepancies between these figures and those in Table 57 must be ascribed to the deficiencies of Pakistan's statistics.

⁸ The backwardness of West Pakistan was mainly due to the bad state of the education system in Pushtu and Beluchi areas.

⁹ In order to fulfil the programme for expanding primary education in East Pakistan it was necessary to build 5,000 new schools and reconstruct around 10,000 others. As a result of the events of 1971, these figures require basic review.

¹⁰ *Pakistan Yearbook*, 1970, p. 325.

¹¹ This low figure can be explained both by the poor state of education and the system of final examinations inherited from the colonial period, which are set by special examination commissions unconnected with the schools.

¹² *Statistical Pocket Book of Pakistan*, 1967, Karachi, 1968, p. 214.

¹³ It must be said that teachers had not been willing to reconcile themselves to this situation and struggled to improve their material status. They became particularly active during the political crisis of Ayub Khan's regime. Thus, on March 17, 1968, around 5,000 teachers from Lahore's municipal schools demonstrated for higher wages, and between July and December teachers joined the students in demonstrations and strikes. Between February and March 1971 there were demonstrations by teachers in East Pakistan advancing both political and economic demands (see, for example, *The Leader*, March 11, 1969; *The Dawn*, March 21, March 22, 1971).

¹⁴ The projected opening of a university in Jahan Girnagar in 1970 did not take place.

¹⁵ Quite a few Pakistani students were educated abroad, mainly in Britain (899 in 1970) and the USA (and in recent years also in Canada and the FRG). Some stay on to work after completing their studies, but the government has taken measures to ensure their return.

¹⁶ Major libraries were opened under Dacca, Karachi, and Hyderabad universities. Governmental organisations supervised stocking the libraries of higher educational establishments, in particular that of the University of Punjab, which has manuscripts in Urdu, Persian, Arabic, Pali and Sanskrit. The recently founded Directorate of Archives and Libraries controlled the National Bibliographical Unit, which recorded all literature, periodicals and government publications issued in Pakistan. An international Book Exchange Centre has also been formed.

¹⁷ *Pakistan Yearbook*, 1970, p. 388.

¹⁸ *Report of the Progress of Education in Pakistan 1966-1967*, Geneva, 1967, p. 6.

¹⁹ There is a considerable disproportion between the needs of the economy for scientific cadres and their actual supply. The notorious "Brain Drain" has also affected Pakistan, while aid from the developed capitalist countries, the USA, Britain, the FRG and Japan, has not had much effect on the state of science there.

²⁰ The average complement of staff in a rural centre or other services is 20 to 30 people, including three or four doctors.

²¹ *Pakistan Yearbook*, 1970, p. 380. These figures differ rather from those published in *The Fourth Five-Year Plan 1970-1975*.

²² The population was estimated at 112,400,000 in 1965, and at 131,700,000 in 1970.

²³ In 1965 there was one doctor to every 7,200 persons, and in 1970 one to every 6,650.

²⁴ One to 3,170 and one to 2,850 respectively.

²⁵ The elimination of the state from the financing of the social insurance system led in practice to the tyranny of the private entrepreneurs. (See V. N. Moskalenko, *op. cit.*, pp. 134-44.)

²⁶ Per capita income in Pakistan in 1965 was 3.3 per cent of that in the USA (see V. N. Moskalenko, *op. cit.*).

²⁷ *The Dawn*, March 16, 1972.

CHAPTER 8

BANGLADESH

The appearance on the territory of the former Eastern province of Pakistan of the People's Republic of Bangladesh brought about a reduction of tension on the subcontinent. The government of Bangladesh has declared its intention to follow a policy aimed at strengthening friendship and co-operation with the countries of the subcontinent, of Asia and the world. On his arrival in Dacca shortly after his release from arrest, the Prime Minister expressed special gratitude to the USSR and the great Soviet people for their "consistent support . . . for the invaluable role which the Soviet Union played at the UN" (*Izvestia*, January 1, 1972).

The population of Bangladesh is estimated at 70 to 75 million, 98 per cent of whom are Bengalis. In accordance with the Provisional Constitution, a parliamentary form of government was introduced, the people elected to the legislative bodies at the parliamentary elections in December 1970 being the first members of the Republic's Parliament.

The social ideal of the Republic was declared to be equality of all citizens irrespective of nationality or religious affiliations, and the creation of a new and just society, free from exploitation. As its immediate aims the government set the following tasks of national reconstruction: the development of agriculture and of the financial system, the provision of employment for returning refugees (nine million

of whom had come back by March 1972), and the provision of food, housing and clothing for the inhabitants of areas that had suffered from the terror of the military authorities.

A start was made on restoring the industrial enterprises (in particular, in the jute industry), railways, bridges and power and communications lines destroyed by the West Pakistan army.

A Planning Commission was set up, entrusted with the task of developing a plan for restoring the country's economy, which had suffered damage estimated at four or five thousand million dollars.

The administration of the Republic took control over all currency and banking operations and over export. It refused to accept responsibility for foreign loans contracted by the government of Pakistan, the more so, since only an insignificant part of the 20,000 million rupees assigned for the development of East Bengal had actually been used for that purpose.

The leaders of Bangladesh expressed their intention to pay special attention to the agrarian problem. On February 20, 1972, the maximum size of holdings was set at 100 bighas (around seven hectares). Any surplus or uncultivated land was to be distributed among the poor. It was also envisaged to set up co-operatives and provide them with loans and to undertake extensive irrigation schemes.

India gave much help to the young Republic, denoting free supplies of food, fertilisers, cement, metal and fuel to a value of 250 million rupees, and granting a loan in foreign currency of £5,000,000.

The complexity of Bangladesh's economic situation makes it difficult to solve problems in the social and cultural sphere. And yet there is no doubt that the eradication of illiteracy is an indispensable condition for economic growth which makes it extremely necessary to undertake a state campaign. Success in developing agriculture will greatly depend on raising the standard of functional literacy. It is therefore understandable that the government called for

the creation of a national educational system that would embrace all citizens without exception.

It is natural that the government has decided on the creation of a national education system which is capable of embracing all citizens without exception. 1973 figures show that the country had 30,446 elementary schools (classes 1-5) with 6,300,000 pupils, 70 per cent of whom were boys. School education is free, and 87 per cent of elementary schools are state-run. Partial secondary schools (classes 6-8) and secondary schools (classes 9-10) form the second stage of secondary education. Fees must be paid for secondary education (only girls can study free up to the 8th class). At the beginning of the 1970s there were 5,900 secondary schools with 1,435,000 pupils, 87 per cent of whom were boys. About 70 per cent of secondary schools are state-run. Intermediate colleges (11-12 classes) prepare pupils to enter higher educational establishments. The country has about 500 colleges (47 of them being state-run) with 328,000 students. There are also about 4,500 Moslem schools supported by various religious organisations.

Secondary specialised education involves vocational technical schools with 4,000 students, and 34 specialised secondary establishments—7 medical colleges (3,200 students), 9 law schools (3,500 students), 2 colleges of commerce (1,400 students), etc. A total of 12,000 people have been brought into the country's system of secondary education. Students can enter vocational technical schools after completing 8 classes, and colleges after 10 classes. Elementary schoolteachers are trained in 48 teacher training schools. The annual output of secondary schoolteachers is about 1,700, whereas there is a demand for 4,000. About 70 per cent of secondary schoolteachers have not completed their pedagogical training.

The country has six universities—Dacca founded in 1921 with about 14,000 students, Rajshahi founded in 1954 with 1,600 students, Chittagong founded in 1968 with 1,000 students, Jahangirnagar University founded in 1971 with

1,500 students, the Maimensingh Agricultural University founded in 1961 with 2,500 students, and the Engineering and Technological University in Dacca founded in 1962 and now having 2,000 students. Bangladesh also has three polytechnic institutes and two institutes for training engineers for the light industry. Fees must be paid for higher education, and a small number of students receive grants.

The government's declared principle of secularism in education has not so far been practically implemented.

Mass illiteracy among the population is a serious brake upon economic, social and cultural progress. The first Bangladesh five-year plan, up till 1978, envisaged the elimination of illiteracy among all people between the ages of 11 and 44, but this was not a very realistic goal, as in 1971 the country was only 21.5 per cent literate (31.5 per cent of men, 10.7 per cent of women).

The health service of Bangladesh is in a very poor state. It must be said that it was also unsatisfactory in East Bengal before 1970.

The geographical nature of the country and its very high density of population (500 per square kilometre) give rise to widespread malaria, cholera and other serious diseases. Owing to the absence of trained cadres, the necessary technology, and, most important, the financial resources, the fight against them has not been waged vigorously enough. The 297 rural health centres, 50 per cent of which were poorly equipped, could not serve the whole population, and their number was increasing very slowly. The military actions and terrorism of the West Pakistan army, moreover, did much damage to the health system, destroying medical establishments and killing many medical workers. The displacement of enormous masses of refugees also created difficulties for the medical service.

At the end of 1970 the area that is now Bangladesh had 8,052 doctors, employed by the state, 12,000 privately practising doctors, 700 nurses and around 10,000 hospital beds (one to every 7,500 inhabitants). The Republic has received

extensive help from India and also from the USSR (through the Alliance of Red Cross and Red Crescent Societies), which have supplied medicines, clothing and food.

* * *

The complex political situation in the country, following the 1975 events, have combined with serious economic difficulties to slow down the implementation of the government's social and cultural reform programme. Experience in the development of newly independent states shows that the consolidation of political independence depends mainly upon the success of socio-economic reforms and the creation of a healthy political climate in this part of the world. A consolidation of all the country's patriotic forces is needed if urgent problems of economic and social development are to be solved.

CONCLUSION

The thirty odd years that have passed since the end of the Second World War have been years of mass revolutionary struggle, years that have brought political independence to the majority of former colonies. They have also been years of active movement toward liberation from imperialist dependence by countries that previously were formally sovereign states.

They have been difficult years.

Tragic conflicts provoked by the meddling of imperialist states, the inconsistent action of political leaders, and the complexities of economic and social development have faced Third World countries again and again with the need to question whether they have chosen the right path of development, with the need to perfect their social institutions and find the proportions of economic growth that would best answer their real possibilities.

Their main task throughout these years had been and remained that of achieving real economic independence, which hinged on many factors: the level of economic development, the availability of natural resources (especially oil), the stability of the political regime, demographic indices, the existence of national cadres, etc.

Despite the difficulties and the failures, we cannot ignore the enormous advances that have taken place in the social and economic life of Third World countries. This is shown

CONCLUSION

291

in their differentiation (into countries of a capitalist or a socialist orientation), in the changes in the class composition of their populations (growth of the proletariat) associated with progress in industrialisation, and in certain achievements in social and cultural transformations, on which solution of the central problem depends to a great extent.

There is no doubt that there cannot be a single path of change for all the developing countries in the modern scene. It would be naïve to think that mechanical transplantation of the model of bourgeois development that took shape in industrially developed countries into a different milieu can of itself guarantee success. Social changes are needed for that, hence, as S. Tyulpanov rightly points out, "political slogans for national development must be concretised, translated into a language that is comprehensible to every toiler, and reinforced by a system of material and moral stimuli".¹

The very first attempts of the countries in question to plan social and cultural measures were hindered by the absence of statistics on the level of education, health, the numbers of experts, etc. Some of them organised statistical services, and paid more attention to the system of questioning the population during the taking of a census. Despite the incompleteness of this kind of material it still helps them to introduce well-founded correctives into their plans for training cadres and expanding research.

Since raising the educational qualifications and the standard of occupational training of the labour force plays a definite role in increasing national income, developing countries are coming more and more to understand that human resources are no less important for industrialisation than capital accumulation. In drawing up their economic development plans the governments of most of them try to aim state measures at improving the qualitative and quantitative composition of the labour force and the outlook for changing the economic, social, demographic and technological factors that affect its demand and supply. (Ineffective utilisation of the labour force can be explained in many

cases by the general economic backwardness of the countries, the exploitation nature of the social system, the low technological level, the profoundly negative influence of their multi-structural build-up on the social psychology and, in consequence, the incompatibility of traditional institutions with the tasks of industrial progress.)²

The industrially advanced countries themselves, it must be said, have not yet succeeded in establishing the economic effectiveness of expenditure on education and health, i.e., the exact relationship between expenditure on these sectors and the growth of national income. Gunnar Myrdal, for example, is very critical of economists' attempts to answer these questions. In his *Asian Drama* he recognised the importance of increasing expenditure, but stressed that it was not as yet possible to clarify "where should health and educational programmes be directed, how far should they be pushed, what means should they employ, and what other policy measures are needed?"³

The current interest in "Investment in Man" and the tendency to include expenditure linked with this in economic plans is very promising.⁴ But in practice the liberated countries are experiencing great difficulties because of the absence of data that would help them to judge the qualitative aspect of education correctly, and the relation between cultural reforms and economic growth.⁵

Nevertheless, most of these countries have been pursuing a state policy in the past decade or so aimed at bringing the tasks of the educational system into line with the needs of economic growth.

The structure and curricula of general educational schools is being re-examined and the content of higher education is being basically reorganised. The concept of continuing education is becoming more and more widely accepted, an idea that has great significance for expanding vocational education, and for shaping the human personality in society. Intensive development of the mass media (radio, television, the press) and the cinema will do much to promote this.

The 1970s could be expected to see a modernisation of management in education, a renovation of the teaching personnel, an improvement in teaching methods, and an increase of allocations for education. The General Director of UNESCO in his summary of its work for 1970, Education Year, noting the progress that had been made in education, said that the main tasks of Third World countries were and remain the following:

- genuine democratisation of schools at every level, access to education for girls and women; the introduction of compulsory elementary education;

- wide dissemination of functional literacy;

- revision of curricula at every level so that they serve the needs of economic progress; improvement of training and refresher training of teachers;

- the development of new teaching methods and study aids, and continuing education;

- the use of mass information media.⁶

Realisation that knowledge is becoming a component part of national wealth is concentrating the attention of Third World governments on scientific development. The very fact that it is recognised as an important element of economic progress and that the corresponding policies are being implemented is evidence of the reality of using science for the purposes of attaining full independence.

Some measures in the field of health give indisputable returns. The progress in fighting malaria (the radical reduction in the number of cases in India, Pakistan and other countries) and schistosomiasis indicate, when stated in monetary terms, however approximately, that the benefit received outweighs the expenditure many times over.⁷

The close relation between the state of health services and the whole social system complicates quantitative evaluation of its development prospects; and though expenditure on health is as high as over 2 per cent of the national income in some Third World countries, its effectiveness is often rendered insignificant by poverty, the unsolved food prob-

lem and the insanitary state of elementary living conditions.

The absence of a complex approach presents an obstacle to progress in the health services of liberated countries. Economic reforms are often carried through without regard for their effect on medicine and hygiene. Irrigation projects, for example, have sometimes caused a disastrous spread of schistosomiasis, which in turn has required vast additional expenditure to deal with it. The young states are threatened also by serious disruption of the ecological balance, which may be a result both of rapacious exploitation of natural resources during the colonial period and of ignoring ecological factors when undertaking the construction of various projects, such as dams and chemical works.

Cultural change in Third World countries depends directly on the social restructuring of society: the more profound and consistent the changes are in the interests of the people, the more successful is cultural development, which actively influences ethnic psychology, promotes the break-up of traditional links within a society with many survivals of old modes of production, and the formation of social forces capable of revolutionary strides. But we should not exaggerate the possibilities of early solution of "difficult" problems. Change will hardly be brought about in the same period of time in all the countries of Asia, Africa and Latin America, but we can assume that the next 20 or 25 years will bring their peoples a marked improvement in standard of living and home and working conditions.

Achievements in education, science and health are dependent on the overcoming of economic backwardness, which in turn is determined by the choice of path of development.⁸ The present historical period of consolidation of national states is linked with the creation of those social, cultural and economic preconditions which, as they are formed in the course of the continuing anti-imperialist national liberation movement, can promote the transition of Third World countries to the road of socialist development.

¹ S. I. Tyulpanov, "Social Strategy and Economic Problems in Developing Countries", in *Trety mir: strategiya razvitiya i upravleniye ekonomikoi* (The Third World: Strategy of Development and Economic Management), Moscow, 1971, p. 15.

² On some of the problems of mixed societies see A. I. Levkovsky, *Trety mir v sovremennom mire* (The Third World in the Modern World), Moscow, 1970.

³ G. Myrdal, *Asian Drama*, Vol. III, 1968, p. 1579.

⁴ For a review of the various conceptions on determining the economic effectiveness of education, see G. E. Skorov, *Razvivayushchiesya strany: obrazovaniye, zanyatost, ekonomichesky rost* (The Developing Countries: Education, Employment, and Economic Growth); V. I. Martsinkevich, *Obrazovaniye v SShA. Ekonomicheskoye znachenie i effektivnost* (Education in the USA. Economic Significance and Effectiveness), Moscow, 1964; *Aktualniye voprosy ekonomiki narodnogo obrazovaniya* (Topical Questions of the Economy of Education), Moscow, 1965. The problem has also been discussed by S. G. Strumilin and others in the Soviet periodical press.

⁵ The need to reassess the standpoint of economists in their analysis of educational systems and science is stressed by P. Oldak in his article "Scientific and Technological Progress and the Boundaries of Economic Analysis", *Mirovaya ekonomika i mezhdunarodniye otnosheniya*, No. 8, 1971.

⁶ Cited in O. K. Dreyer, "Education in the Developing Countries of the East", *XXIX International Congress of Orientalists*, Moscow, 1973, p. 14.

⁷ The book by O. V. Makeyeva and E. Y. Burnashev, *O zdorovookhraneni v Indii* (Health in India), Moscow, 1964, p. 81, contains figures on the annual direct losses from malaria cases and deaths. In 1935 they were estimated at 200 million dollars; annual per capita expenditure on measures to exterminate the malaria mosquito was estimated at approximately eight cents.

⁸ There is justice in R. A. Ulyanovsky's thought, that "the time has come for a more concrete study, for a thorough analysis of the accumulated experience of the economic successes and failures of a number of developing countries" (*International Affairs*, No. 8, 1971).